The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. LVIII, No. 3 CHICAGO, ILLINOIS JANUARY 20, 1912

THE TECHNIC AND RESULTS OF DEEP INJECTIONS OF ALCOHOL FOR TRIFACIAL NEURALGIA

HUGH T. PATRICK, M.D.

Clinical Professor of Nervous and Mental Diseases, Northwestern University Medical School

CHICAGO

TECHNIC

The technic of deep injections of the fifth nerve is simplicity itself. A straight needle is introduced at the lower border of the zygoma and pushed in until the point penetrates the sheath of the branch involved; then alcohol is injected through the needle into the nerve. Sometimes the procedure itself is as easy as this sounds, but often there are difficulties, occasionally disappointments; hence the numerous details and hints which follow, based on the treatment of 150 patients between Aug. 1, 1906, and Sept. 1, 1911.[1]

The ophthalmic division may be disposed of in a few words. I do not approve of deep injections of this branch. The optic and the third, fourth and sixth nerves as well as large vascular channels are too near for perfect safety, and in my experience superficial injections of the supra-orbital have been uniformly successful. The patient being recumbent, with an ordinary (long) hypodermic needle the nerve is injected at the supra-orbital notch which, as a rule, is easily palpable. When the notch is not to be felt, the pain caused by firm pressure on the nerve may locate it. Occasionally both fail and then the operator must rely on topographic anatomy. Ordinarily, when the needle point strikes the nerve the patient feels a shoot of pain in the forehead, sometimes as high as the vertex. But this, too, may fail and then the only thing to do is to inject where the nerve is thought to be and examine for analgesia in its distribution. Nearly always the patient knows when the alcohol goes into the nerve by the sharp pain running upward, but the only reliable criterion of a successful injection is analgesia in the supra-orbital area. This appears at once, and until it does appear the nerve has not been injected. As a matter of practice, the nerve is very easily found and rarely should be missed.[2]

When possible the needle is made to follow backward along the nerve so that an appreciable extent of it may be injected. Naturally such an injection reaches fibers given off in the orbital roof and is more effective than one made at a single point. Ten to twenty minims are sufficient. Immediately on withdrawal of the needle, pressure is made over the *locus* of injection. This exsanguinates the tissues allowing the maximum effect of the alcohol and, what is not a matter of indifference to the patient, it controls oozing and thus prevents a black eye. What it does not prevent is swelling. This is always more or less marked. Sometimes it closes the eye for a couple of days and is always greater and lasts longer in cases previously treated by a cutting operation. The deeper the injection is made along the roof of the orbit, the greater the swelling. Aside from the tumefaction and occasional discoloration, which need no treatment, I have encountered no unpleasant effects from this injection except pruritus, of which two or three patients have complained. In only one case was it really troublesome, and in all it gradually subsided. One patient developed a triangular patch of alopecia at the hair margin, base forward. This also was only temporary. The solution used is that given in the deep injections.

The supratrochlear branch of the frontal nerve may have to be separately injected, as will be explained later. It may be reached at a point about midway between the inner canthus of the eye and the eyebrow on a line running upward and inward at an angle of about 45 degrees. This sounds indefinite, but I have never failed to get it.

For the superior and inferior maxillary divisions (hereinafter called middle and inferior), I use the practically unmodified method of Lévy and Baudouin.[3] To avoid repetition it seems best first to deal with the method as a whole and then give the technic pertaining to each branch.

The straight needle is 12 cm. long, 1.75 mm. thick, not acutely sharp, with a stylet the somewhat rounded end of which is flush with the needle-point when the stylet is pushed home. It is graduated in centimeters from the point up to five (six would be better), so that the operator at all times may know just how deep he has penetrated. The proximal end is fitted to receive the threadless nozzle of a syringe, preferably of glass and holding 2 c.c. or more (Fig. 1). In operation the stylet is slightly withdrawn until the needle has penetrated the skin and subcutaneous tissue, when it is pushed home thus providing a blunt point for the deeper course; this to avoid injury of vessels. The nerve having been reached, the stylet is removed, the filled syringe fitted to the needle and the solution injected. Some operators have discarded the stylet and use a sharper needle of smaller caliber. I have tried both and decidedly prefer the older instrument except in a very occasional case in which the tissues are so tough that penetration with the blunt instrument is difficult. I

1. This number includes a half dozen patients treated during my absence by my assistants, Drs. Peter Bassoe and Ralph C. Hamill, but does not include old cases reinjected after recurrence.

2. Here as elsewhere I have come across the most astonishing bungling: even cutting operations on this branch, in which the nerve had been cleanly missed though presumably excised.

3. Presse méd., April 17, 1906; and also Lévy: Essai sur les Nevralgies Faciales, Paris, 1906.

think there is no doubt that the sharper needle causes about as much pain and more oozing. I believe, too, that it is more apt to puncture a vessel of size. The middle meningeal artery, in passing through the foramen spinosum, is not far from the inferior maxillary where it is injected. A sharp slender needle might cut this artery. Being slender and flexible, it is not nearly so easy to manipulate; it is not easy to change its direction while *in situ*. The point, too, is appreciably beyond the opening and being acuminate is less apt to announce its impingement on the nerve. Even the heavier needle has been known to snap off at one of the centimeter marks. The solution I use is as follows:

	Gm. or c.c.		
Cocain Muriat.	1		gr. ii
Alcohol	13 5	or	ʒ iiiss
Aq. Dest. q. s. ad	15 5		ʒ ss

I have tried leaving out the cocain, but think the injections rather less painful with it in. I do not use pure alcohol because this is strong enough to stop the pain, and the stronger solution hardens the tissues more, making reinjections more difficult and painful. Generally about 2 c.c. are used. If the operator feels satisfied that the needle is in the nerve (he never *knows* it), less is enough. If I am injecting about at several points (that is, searching for the nerve) I sometimes use 3 c.c., rarely more.

I very much prefer not to use an anesthetic (and have done so in only four cases) because the conscious patient is of great assistance. Impingement of the needle on the nerve generally is announced by a sharp, rarely severe, pain somewhere in the area of its distribution. (Sometimes it is only a "pins and needles" feeling.) When the operator thinks he has gone deep enough and must be near the nerve, but has not caused this eccentric sensation, by pressing the point of the needle upward

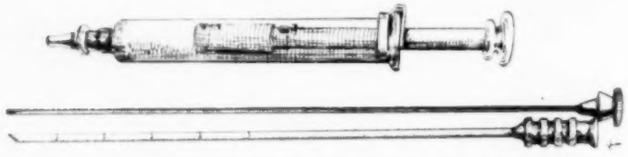


Fig. 1.—Syringe, stylet and needle used for alcohol injections in neuralgia.

or downward, backward or forward, he may start such a pain or paresthesia, thus indicating the location of the nerve. The needle is then withdrawn a little, the direction slightly changed toward the indicated point and another trial made to put the needle into the nerve-sheath. Furthermore, examination for analgesia before termination of the operation, as indicated below, cannot be carried out if the patient be anesthetized. Right here I may as well emphasize, what will appear later, that no attempt should be made to reach the nerve by one vigorous shove. The procedure is rather that of feeling one's way, on the lookout for bony points and eccentric pain, i. e., pain in the peripheral distribution of the nerve.

If the needle has attained the proper depth in what seems to be the proper direction and still no eccentric pain has been produced, the stylet may be withdrawn and a little alcohol injected. It should be sent in with a little force or spurt. Odd as it may seem, the needle itself sometimes does not cause pain when it strikes the nerve, but this spurt of alcohol nearly always does. Or it will cause a tingling sensation in the area of distribution. In either case the injection is in or near the nerve. Supposing that thus far all results are negative, the syringe is detached, the stylet replaced and the needle pushed still further in or it is partly withdrawn and a slightly different direction tried. When the needle is thus partly withdrawn to change its direction or wholly withdrawn after finishing the injection, it should be done slowly and with the stylet quite removed. If, then, there be any deep oozing it will show through the needle, when the stylet is replaced, the needle pushed back to the point bleeding, or just beyond it, and left there until the hemorrhage stops. Occasionally the oozing point is in or just beneath the skin, in which case the needle is withdrawn and the hemorrhage controlled by pressure. If the operator has reason to believe that he has reached the nerve but blood follows withdrawal of the stylet, he may make the injection just the same (though it is apt to be less effective), replace the stylet and wait for the oozing to stop.

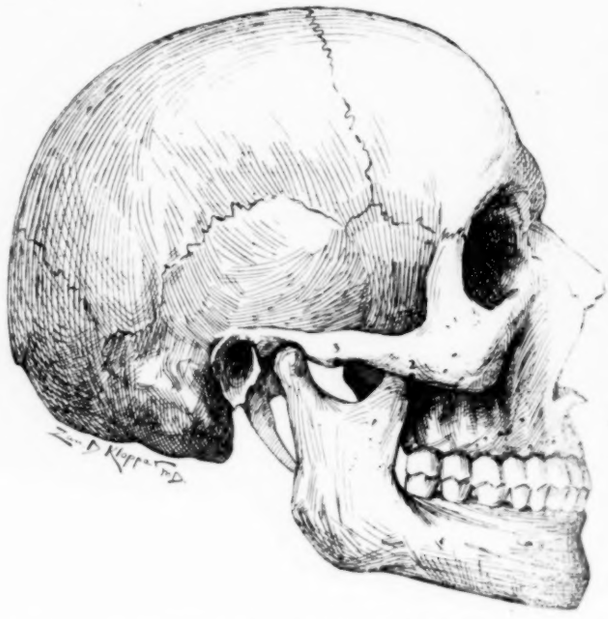


Fig. 2.—An average skull. Dots 2 and 3 indicate points of entrance for injection of middle and inferior divisions, respectively.

In any event, the alcohol having been introduced, it is a good plan to leave the needle in place while an assistant examines for analgesia. If deep pin-pricks in the area supplied by the branch in question cause no pain at all, the injection has been successful. If the numbing be only partial or limited to only part of the area, the injection is partially successful and the operator should try another point or two in the immediate vicinity. If there be no sensory blunting at all, the injection is a failure and the operator must then or later try other points. Occasionally the analgesia appears a few minutes after termination of the operation. With appearance of analgesia the pain ceases. But this means that the alcohol has been put near, not in, the nerve and such delayed analgesia is always transient and the relief from pain of short duration. Still, such a partial success may serve as guide for the next injection. The injection having been made and the needle withdrawn, the point of puncture is dried and covered with a drop of collodion, completing the operation. I like to have the patient remain recumbent for fifteen or twenty minutes

(more if there has been oozing), but do not always insist on it. Many patients wish to get up at once.

How many injections may be made at one sitting, supposing more than one branch to be affected? Formerly I made but one, allowing a couple of days between. Now I frequently do three: a deep one for middle and inferior respectively, a superficial one for supraorbital. The patient decides. If he wishes to get through as soon as possible, I do them all at once.

How soon may injection for a given branch be repeated? I like to wait for two or three days, but often do repeat the following day; sometimes I even give a third injection one day after the second. But more than this should not be done. Frequently repeated injections not only cause swelling and discomfort, but so harden the tissues as to make the operation more difficult and uncertain. In one case, sent to me from a distance, in which a lot of injections had been made (fruitlessly) within a short time and in which I gave one injection against my better judgment at the earnest solicitation of the patient, when I injected the alcohol it returned through two of the recently made punctures. That is, the tissues were so sclerosed that a canal made by a needle, 1.25 mm. thick, remained patulous for two days.

In relation to this treatment, one clinical feature of the douloureux is important. In practically every case the jabs or paroxysms of pain are started by commonplace sensory impressions such as washing the face, eating, talking, even ordinary nictitation. Now, sometimes such a sensory stimulus of one branch causes pain not in that branch but in an adjoining one. The supra-orbital is especially liable to these secondary or referred pains. For instance, the act of swallowing may cause a shoot of pain above the eye. Rubbing the chin may start a pain felt in the wing of the nose. In all such cases, the nerve supplying what I venture to call the dolor-genetic zone must be treated. A physician familiar with this treatment brought to me a patient for injection of the middle branch, which he had operated on a number of times with only partial relief. He really had injected the middle branch as well as it could be done, but I found that, though there was no pain in the inferior maxillary area, rubbing the skin in this area caused the middle branch pain; injection of the lower branch at once stopped it. Occasionally the dolor-genetic zone is found on the upper part of the side of the nose, and injection of supra-orbital and infra-orbital nerves will not suffice. The supratrochlear, which supplies this area, must also be injected. I suspect that it may have been the effect of these unnoticed dolor-genetic zones which led Lévy and Baudouin to advise injection of both middle and inferior branches, even though only one was affected. This I have not found in the least necessary, provided the painless area be not dolor-genetic. Needless to say, a branch not involved at the time of treatment may later become so. But I do not believe in prophylactic injections.

Fig. 3.—Needle placed for injection of middle branch. Ink mark above indicates orbital process of malar bone. Small dot a short distance posterior to needle and at slightly higher level indicates where needle was inserted for injection of inferior branch.

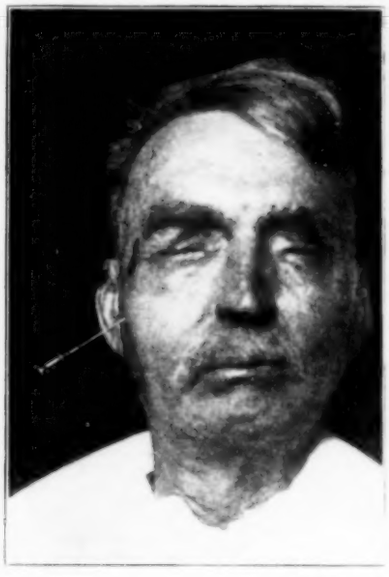


Fig. 4.—Same as Figure 3: front view.

Fig. 5.—Needle placed for injection of middle branch. Note that needle is lower than in Figure 4 and has greater upward inclination.

INJECTION OF THE SUPERIOR MAXILLARY NERVE

To inject this nerve, a point of entrance is selected at the lower border of the zygoma, 0.5 cm. behind a perpendicular let fall from the posterior edge of the orbital process of the malar bone (Fig. 2). This edge is easily felt. The needle is directed straight in with an inclination upward; that is, perpendicular to an antero-posterior line, but so inclined upward that the point at a depth of 5 cm. shall be on a level with the lower end of the nasal bones or slightly lower than the posterior pole of the orbit (Figs. 3, 4 and 5). At this depth and angle the point of the needle is supposed to engage the nerve as it emerges from the foramen rotundum into the sphenomaxillary fossa. But, unfortunately, the internal features of human kind are about as variable as the external and some of the variations affecting this operation must be enumerated.

The line of the zygomatic arch is exceedingly inconstant. Sometimes it is high, sometimes low and occasionally the anterior segment dips at an angle of 45 degrees or more. These factors influence the upward

inclination of the needle. The width of the bony process (orbital) varies from about 0.5 cm. to about 2.0 cm. This affects the position of the perpendicular let fall from the bony edge. But probably the most frequent disconcerting variation is found in the coronoid process of the lower jaw. Quite often it is found so far forward that penetration at the point of selection is impossible (Figs. 6 and 7). Ordinarily, by palpation this can be determined beforehand and the needle is then inserted far enough forward to avoid the process. But this shift may involve new difficulties. In the first place, it puts the point of entrance lower (sometimes much lower; Figs. 8 and 3) as well as more forward, which means quite a different angle for the needle and an added depth not so easy to estimate. But the most serious difficulty this shift may present is that the needle from this starting-point directed toward the foramen rotundum may impinge on the superior maxilla. And here is another variation. In some persons the posterior boss or curve of the body of the upper jaw, above the alveolar process, is no curve at all, but is quite flat. In such cases a needle can easily be passed from well forward to the foramen rotundum. In other individuals this posterior surface is very convex and projects well backward (Fig. 9). Even the lateral bulge may be pronounced. If then the superior maxilla be avoided, the needle is so deflected outward (from the median line) that it cannot possibly reach the nerve at the foramen rotundum or at any other point. The alternative is to go behind the coronoid process, and sometimes this can be done at a point only slightly back of the point of selection. But the coronoid process may be very broad, so that to go behind it starts the needle so far back that it is blocked off by the root of the pterygoid plate or of the wing of the spheroid before it can reach the nerve. When the nerve can be reached neither from in front of, nor behind, the coronoid, the operator must perforce try above the zygoma, and in this manner I have succeeded several times. Indeed, a surgical friend at one time chose this as the route of selection, and it is advised by Offerhaus, but it is not the best.

Assuming that the coronoid process has been passed, the variation of depth may next be considered. Lévy and Baudouin said that the nerve would be found at 5 cm. I have found it at from 4 cm. to 6 cm. Since November, 1908, I have taken the interzygomatic diameter of the head in every case (over eighty in all) and have found this of some assistance. Analysis of these cases shows that when the interzygomatic diameter is 5 inches the middle branch will be found at about 5 cm. When the interzygomatic is 4¾ inches the nerve will be reached at rather less than 5 cm. When the interzygomatic is 5½ inches the depth will be 5.25 cm., and with a diameter of 5¾ inches or more the depth will be about 5.5 cm.[4] But these relations are only approximate; variations are frequent and not inconsiderable. Early in 1910 Offerhaus, an assistant in the surgical clinic of the University of Groningen, published the results of some investigations on this subject.[5] He found the foramen rotundum to be in the antero-posterior line of the inner surface of the molar teeth. Hence, to determine the depth of this foramen he takes half of the difference between the interdental distance and the interzygomatic distance taken at the point of injection. I procured the instruments of Offerhaus and, since Oct. 14, 1910, I have tried them in every case, but have found the scheme of but little value. In the first place, but few of these patients have any upper molars left and an estimation of where their inner surfaces formerly were must be pretty vague. Second, variations in dental arch and angle of teeth are great. Generally, I have found the Offerhaus figures to be low; i. e., the nerve was deeper than estimated.

In some skulls the pterygomaxillary fissure and the sphenomaxillary fossa are mere chinks, so narrow that the needle goes in with great difficulty or not at all. In such a case the operator must simply keep on trying at different angles until he finds the one which will allow

Fig. 6.—Dots 2 and 3 indicate same as in Figure 2. Coronoid process well back; pterygomaxillary fissure easily accessible.

Fig. 7.—Coronoid process further forward than in Figure 6. Fissure not visible. In some patients the coronoid process is still further forward than indicated here.

4. When I began to take these measurements it happened to be convenient to take them in inches. The needle is graduated in centimeters. Hence the mixtures of two systems of linear measure.

5. Offerhaus: Arch für klin. Chir., xcii, No. 1; Deutsch. med. Wchnschr., 1910, No. 33.

the needle to slip into the nerve—or until he gives up in disgust or the patient objects to further attempts. That is to say, I believe there *are* cases in which this operation cannot be done because of bony impediments. On the other hand, one must not be too quickly discouraged. In several instances, after success was almost despaired of, the needle has slipped by the obstruction straight to the nerve—a delightful surprise for both physician and patient. And I hasten to add that the cases in which injection is impossible are very rare indeed. But one of the most disappointing experiences is to make the injection without a bit of trouble and then, at a later date, when further treatment is needed, be able to reach the nerve only after repeated trials.

In operating on the middle branch two things in particular are to be avoided: first, the orbit; second, the sixth nerve. The first error is committed by going too far forward. Careful attention to the direction of the

Fig. 8.—Needle placed for injection of inferior maxillary division. The small dot anterior to and below needle at angle of more than 45 degrees indicates point from which middle branch was injected. Note that difference in level is much greater than in Figure 5. The white scars are from former abscesses.

needle will guard against this. The second is the result of going too deep and I think it is not always to be avoided. But it need not amount to much. The alcohol is injected a little at a time and if, after every few minims, the patient is asked to look outward (that is, upward as he lies on the side—abduction or outward rotation), the operator will at once detect any weakness of the external rectus and stop injecting. The paresis will then be insignificant and transient; a few minutes to a few days. Since adopting this precaution I have had no trouble with the sixth nerve; that is, in the last eighty-one cases. Inspection of a skull will show, too, that it would not be difficult for a careless operator to pass the needle through the spheno-palatine foramen into the nasopharynx—an accident that might be uncomfortable but not dangerous. If the needle be inclined upward this could not happen. In practice I have found it a good plan to direct the needle a little more backward than I expect the foramen to be *so that the point strikes the external pterygoid plate.* From this point it is gradually worked forward until it slips by the anterior border of the process. This settles the anterior posterior position of the foramen, and, a little further in, the point will find the nerve, provided the upper slant of the needle is right.

When it is found impossible to reach the nerve by the deep route, the infra-orbital can readily be injected at the infra-orbital foramen. This stops the pain unless twigs given off further back are involved. Even though there may be no pain in these little branches, they may be gain-genetic, as explained before.

For this superficial injection an ordinary (long) hypodermic needle is used (Fig. 10). To find the foramen is not always easy. The opening into the canal is nearly always oblique, generally upward and outward, never at just the same angle. It may be impossible to introduce the needle to any length along the nerve, but this should be attempted. Fifteen or twenty minims of the solution are plenty if accurately placed. On withdrawal of the needle, firm pressure should be made to minimize swelling and prevent ecchymosis. Relief from

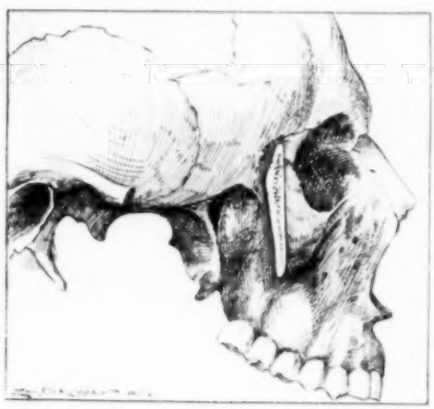


Fig. 9.—Shows rounded superior maxilla. Here the pterygo-maxillary fissure is wide. In some patients it is very narrow.

these superficial injections is shorter-lived than from the deep ones, but they are very useful.

INJECTION OF THE INFERIOR MAXILLARY NERVE

For this division the Lévy and Baudouin point of entrance is at the lower border of the zygoma, 2.5 cm. in front of the anterior root of the zygoma (Figs. 2 and 6), a descending process which forms part of the anterior wall of the auditory canal and the posterior limit of the glenoid fossa. It can always be felt. The needle is directed somewhat backward and slightly upward and at 4 cm. should reach the nerve (Figs. 8, 11, 12, 13 and 14). Offerhaus[5] selects a point just in front of the preglenoid tubercle, which constitutes the anterior limit of the glenoid fossa, and directs the needle at right angles to the anterior posterior plane. As a rule, either will serve. The directions of Lévy and Baudouin certainly are rather vague as a guide to a thread of a nerve nearly 2 inches below the surface. The rule of Offerhaus is more definite—but it does not work with any uniformity. Here, as elsewhere, the conformation varies greatly. In dolichocephalic individuals, or those with a long zygoma, the point of Lévy and Baudouin does very well. In the brachycephalic, or those with a short zygoma, this point

is too far forward. On the whole, the point of Offerhaus is better, but to go in very close to the jaw-joint gives the patient unnecessary subsequent discomfort. Occasionally the sigmoid notch of the lower jaw is so shallow that the ramus of the jaw almost reaches the zygoma and the operator must go in where he can. In two or three cases I could not get the needle by until the patient opened the mouth. In practice I have come to vary the point of entrance from 1.5 to 2.5 cm. anterior to the bony ridge taken as a landmark, or from a point immediately in front of the tubercle to one a centimeter farther forward.

A really valuable landmark is the external pterygoid plate. The foramen ovale, at least in the vast majority of cases, is directly back of this and at about the same depth. Hence I aim to strike this plate close to its posterior edge and then work backward until the needle slips by it. Then I have every reason to believe that the point of the needle is just in front of the nerve and at about the proper depth. But here, as in the case of the second division, it is well to make beforehand some estimate of the depth of the nerve. From what has already been said it is obvious that the 4 cm. of Lévy and Baudouin hold good in only a certain proportion of cases. Offerhaus[5] says that the foramen ovale is on a line with the external surface of the alveolar process of the upper jaw in the molar region. Hence, he deducts this interalveolar distance from the "intertubercular" (zygomatic) diameter and divides by two—which should give the depth of the nerve. It does not work out very well. Generally the nerve is somewhat deeper than the figures indicate. Very rarely it is less than 4 cm.; frequently more. Analysis of my measurements in eighty cases indicates the following: When the interzygomatic diameter is 5 inches the nerve will be found at 4 to 4.25 cm. When the interzygomatic is 5½ inches the nerve is apt to be at over 4.5 cm. But these are only approximations. In one case, with an interzygomatic of 5¾ inches, I found the nerve at 5.5 cm. and in another, with an interzygomatic of 6 inches, the nerve was found also at 5.5 cm. Indeed, if it had not been for the plan of striking the ptergyoid plate as a preliminary, I should scarcely have had the courage to go so deep. In one of my earlier cases I made a most successful injection because, at the moment, I confused the depth of the inferior branch with that of the middle one and went to 5 cm. instead of stopping at 4. In one case I was forced to the conclusion that the foramen lay behind the pterygoid plate and could not be reached. In some cases the nerve is far back, quite a distance from the posterior edge of the pterygoid plate, necessitating a strong inclination of the needle backward.

In a former paper[6] I advised hugging the base so as to pierce the nerve just at its exit from the foramen. In many cases this is not a good plan because the under surface of some skulls is very uneven and the irregular and unnamed processes serve to confuse the operator; he feels bone everywhere. A little lower the nerve is more easily found.

When the needle reaches the nerve the patient, as a rule, feels a pain in the lower lip or jaw or tongue, but occasionally this pain is wanting and occasionally there is simply a pain, the patient does not know where. If the needle goes too far back, the patient is apt to complain of pain in the ear. That is, the operator must then look for the nerve more anteriorly. Although, as just noted, it may be necessary to go as deep as 5 cm., this should be ventured only when measurements indicate unusual depth and the needle should first be directed enough forward to strike the pterygoid plate. To go too deep *might* mean disaster.

Fig. 10.—Superficial injection of infra-orbital nerve.

Fig. 11.—Needle placed for injection of inferior branch.

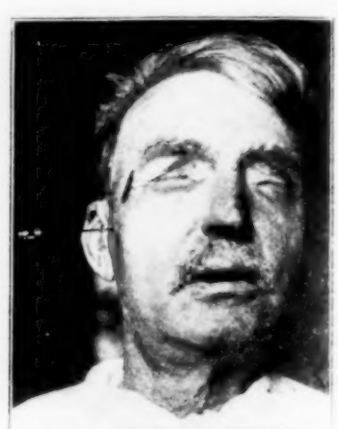


Fig. 12.—Same as Figure 11; front view.

RESULTS

Concerning any proposed method of treatment the following are pertinent questions. Does it cure? Failing of cure, is it yet effective? Is it dangerous? Has it disagreeable or uncomfortable by-products? Is it difficult? Is it practicable? To these questions concerning the method under discussion I submit the following answers; perhaps I should say opinions.

Does it Cure?—It does not. So far as I know, nothing does except a perfectly executed Gasserian operation (or section of the sensory root?).

Is it Effective?—It is. The moment alcohol is injected into the affected trunk or trunks the pain ceases and cannot be started. The patient who a few moments before could not eat, talk, wash the face, etc., without paroxysms of excruciating agony, may do all of these things with impunity. In the whole field of therapeutics I know of nothing more striking. Many dramatic examples could be given. One or two will suffice.

CASE 1.—A man of 51 had suffered for ten years and had had two neurectomies. The paroxysms were of great severity

6. Patrick, Hugh T.: THE JOURNAL A. M. A., Nov. 9, 1907, p. 1567.

and were started by even lightest touches on the face. He was weak and thin from lack of food, his wife feeding him small quantities of milk with a teaspoon carefully introduced on the good side. His face was incrusted with filth, the accumulation of months. In a few seconds after completion of the injection he was perfectly at ease.[7] I could rub and scour his face without causing a trace of pain and he drank a glass of ice-water without the least discomfort. He was relieved for eleven months, then he was again injected, again with relief.

CASE 2.—A poorly nourished, nervous, highly sensitive woman of 62 years, for four years had been unable to touch the face or eat without starting severe pain. Immediately after the injection I bunched up my handkerchief with the idea of giving her face a rub to test the result. She saw my intent, yelled with terror and tried to dodge, but when the rub caused no pain at all her astonishment was ludicrous.

But will the relief continue long enough to be worth while? Naturally, this will be a matter of opinion. My own opinion is expressed further along. A good injection will give relief for from six months to four years. By a good injection is meant one which produces pronounced analgesia (lasting more than two or three days) and which makes it impossible to start the pain by the ordinary sensory stimuli. Whether the relief shall be for six months or four years will depend on the accuracy with which the injection is made and on the virulence of the case. Just why some cases are more rebellious than others I do not know. That they are, I think I do know. I suspect that the more intractable ones are those in which all the twigs and ramifications of the nerve are involved, thus affording more dolor-genetic zones.

Fig. 13.—Needle placed for injection of inferior branch.

Perhaps this is the best place to speak of cases of recurrence after previous cutting operations and previous alcohol injections. I have treated patients for recurrence after all the customary operations for this disease except the Gasserian operation. And injection of these patients seems to be just as successful as of the non-operated ones. The same is true of recurrence after the injection treatment. I have often wondered whether in the course of years repeated injections of alcohol would not finally so harden the tissues as to stop the treatment or even aggravate the neuralgia. Up to date I have not encountered this trouble. The sclerosis obviously caused by the alcohol gradually disappears.

Is it Dangerous?—It is not. I have never heard of a fatality. I know of one case in which a surgeon evidently got his needle into the foramen rotundum and introduced alcohol into the cranial cavity. Obviously this would cause edema and pressure. The patient was unconscious for several hours and apparently in bad condition for twenty-four hours, but recovered with complete relief from his neuralgia.

Has it Disagreeable or Uncomfortable By-Products?—It has or at least may have. In two cases I have caused a considerable paralysis of the sixth nerve and a keratitis. The first patient completely recovered in about three months. The second passed from observation and I can get no report.[8] As I have already explained, I think this complication can be avoided. In the last eighty-one cases I have had no such trouble, indeed no complication of any sort. In one case (No. 50) there was some necrosis of soft and hard palate, which lesions healed kindly. The patient was 76 years old with advanced atheroma and senile myocarditis. The injection caused a rather free deep oozing with formation of a hematoma, and evidently the pressure was too much for the patient's bad vessels and poor heart. The neuralgia was relieved. A few other times injection of the middle branch has caused a distinct hematoma, followed by ecchymosis as low as the chin or even on the neck. Resolution was always rapid and perfect. I have not observed this complication since adoption of the plan of watching for oozing through the needle and, when present, leaving needle and stylet *in situ* until it stops.

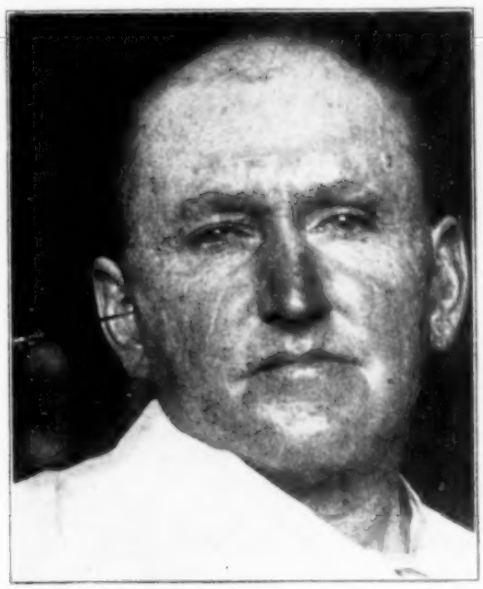


Fig. 14.—Needle placed for injection of inferior branch.

7. In this case an anesthetic was indispensable. Even palpation of the face was impossible without it.

8. Case reported in THE JOURNAL A. M. A., Dec. 11, 1909, p. 1987, Case 69.

Following injection of the inferior branch there may be some stiffness of the temporomaxillary joint lasting for several days and in a few cases the same injection caused some weakness of the pterygoid muscles, not disabling and not of long duration.

In patients who have had the middle branch cut or avulsed, injection of this branch is apt to cause swelling. But sometimes, in a patient who has not been operated on, the swelling is quite perceptible. In one case (No. 6) in which I inadvertently put the injection into the orbit, there was produced marked edema of eyelids and conjuctiva, but no other ill effects.

I have never had a case of infection.[9] As already noted, an anesthetic is not used. A hospital is unnecessary. Nearly all of my operations have been done in the office. As a rule the pain is inconsiderable. Occasionally it is severe for an instant when the needle strikes the nerve. Queerly enough, the alcohol itself is painless. After the injection there is no burning or throbbing such as one might expect from 2 c.c. of strong alcohol placed in the tissues. When considerable force is used in making the injection, the patient generally feels some headache. Even without force headache may be caused. It rarely lasts more than an hour or two.

Naturally, some patients are more nervous than others. Very rarely a patient is rather upset and trembly for half an hour or so afterward; he has what one might call emotional shock. But real shock I have not seen. One patient became nauseated and vomited, but was well within thirty minutes.[10]

Is it Difficult?—It is not. But it is very uncertain. Herein lies the greatest drawback to the operation. Any physician can be clean. Any physician can insert the needle in the proper place and project it in the general direction of the nerve. But will he strike it? He does not know. No operator can be sure that any given attempt will be successful. On the contrary, he knows beforehand that a good many of his efforts will result in clean misses. And a good many will be only partially successful.

To put this uncertainty in figures is impossible. Statistics are notoriously misleading, and this particular point does not well lend itself to statistical elucidation. But, in my opinion, the uncertainty of the operation has hitherto been touched on rather lightly and vaguely. Consequently I shall try to state it as definitely as may be. I have made about 500 deep injections. In the case of the middle branch about 25 per cent. have been misses, about 12 per cent. partially successful and 33 per cent. good. Of those for the inferior branch about 27 per cent. have been misses, 45 per cent. partial successes and 28 per cent. good. In only about 18 per cent. could the first attempt at either branch be considered successful. But notwithstanding this uncertainty, nearly all the patients who gave the treatment a fair trial were relieved. As may be imagined, sometimes when the first attempt failed the patient lost courage and wished no further injections. This could not reasonably be counted a failure. Quite naturally, too, many a patient is satisfied with an imperfect injection and consequently has relief for a short time only. That is to say, an injection is placed not in the nerve, but alongside of it. This stops the pain; the patient is perfectly comfortable. But as there is only a little or no analgesia, the operator knows the relief will not be for long. Formerly in such cases I urged continuance of the treatment until a perfect result could be obtained. Now, unless the patient resides at a great distance, I do not do so because I found that some of the injections which I thought would relieve for a few weeks at most, kept the patient comfortable for six months or more; in at least one case for more than a year.

Is it Practicable?—It is. The instruments are simple, inexpensive, readily obtained. A prolonged surgical training is not a prerequisite, the necessary anatomic knowledge not difficult to acquire. But the beginner should carefully study a couple of skulls before operation, and it is well at all times to have one at hand. Of course, practice on the cadaver is still better. Consequently any careful general practitioner of average skill may do the operation. A number of my patients have had further successful injections by their family physicians. Many of these unfortunate people cannot well go long distances to reach a surgeon skilled in the radical operation, cannot well incur the expense of a capital surgical procedure with hospital residence. Such, then, may be treated at home.

From the foregoing it is hoped that the reader may form some opinion as to the value of this treatment and as to the place it should occupy in the therapeutics of trifacial neuralgia. But that I should express my own opinion—provisional though it may be—seems only fair.

CONCLUSIONS

1. For the very old, the very feeble and for those with grave organic disease, I believe this to be incomparably the best treatment. Practically without danger, without shock, without an anesthetic, almost without inconvenience the great majority of such patients may be kept comfortable until length of years or intercurrent disease brings the end. A few examples will illustrate.

CASE 3.—A clergyman, 77 years old, for twenty years had suffered from tic douloureux of such severity as to invalid him from the beginning. He had advanced atheroma and senile myocarditis and four months previously had sustained a cerebral thrombosis, leaving him word-blind. He received two injections and never had another pain. Although, of course, his vascular and cardiac degeneration gradually progressed and finally were fatal, immediately after the injections he gained in weight and strength and was entirely comfortable for the two years and three months he survived.

CASE 4.—A woman, aged 72, with atheroma, dilated heart, irregular and intermittent pulse, had had neuralgia for forty-three years, for which she had undergone eighteen operations. The paroxysms were of exceeding severity. She was very weak, but could not eat on account of the pain. Relief was imperative. Her surgeon referred her to me. Two injections stopped the pain, but eight months later reinjection was necessary. She was again relieved, this time for nineteen months. When she returned it was obvious that dissolution was not far off. The heart was greatly dilated, pulse weak, irregular and intermittent, ankles swollen, gait feeble and ataxic. One injection completely relieved her and she was free from pain until her death about five months later.

CASE 5.—A man of 74 years, with typical neuralgia of lower branch, was apparently in good health for his years, but examination showed nephritis (interstitial), enlarged heart and arteriosclerosis. Two injections relieved the neuralgia, and he died fourteen months later of uremia, having had no recurrence.

9. I wish to add that the alcoholic solution does not necessarily make the patient proof against an infected needle or other surgical dirt. Figure 8 shows scars left by abscesses caused by promiscuous and ill-advised injections some months before the patient came to me. Asepsis in the operation is assumed.

Since writing this paper I have learned of a case in which extensive sloughing of buccal, malar, temporal and parietal regions followed a deep injection for the third division. I do not know what method was used.

10. One earlier patient vomited several hours after the injection. This I attributed to morphin, then used in the solution, but since discarded.

CASE 6.—A friend of the foregoing, 77 years old, also apparently in good health, but with atheromatous arteries, was at once relieved and remained free from pain until his sudden death five months later from angina pectoris.

CASE 7.—Quite recently I was consulted by a man of only 68 years, but with serious infirmities. His pulse was 120, at times higher, irregular and intermittent; there were pus, albumin and casts in the urine; systolic blood-pressure from 130 to 210 (so much did the force of the systole vary), no pulse in the dorsalis pedis; some dyspnea and edema; memory poor; gait slow, *à petits pas*. This last was of grave prognostic significance. Obviously this was a most unfavorable case for anesthetic or operation. A single injection made in the office on the occasion of the first call gave instant relief.

CASE 8.—In June, 1907, was sent to me a woman of 82 years in pretty good general condition, but weak from lack of food. She received one injection each for middle and inferior branches, with complete relief for a long time. Of late (August, 1911) she had again had pain, but apparently not bad enough to require interference.

2. Save in the hands of a few exceptionally experienced and skilful men, the Gasserian operation is a dangerous and somewhat uncertain procedure; certainly a capital operation.

3. Nevertheless, when the sufferer from tic douloureux is young and vigorous with a prospect of living many years, it would be better for him to have the radical operation done at once by a first-class man, as in all probability eventually he will come to it.

4. There is a considerable class of middle-aged patients in good or fairly good health for whom a choice of treatment is not so simple. Concerning these I venture to submit the following:

A. In addition to expressing his own predilection the physician should make a plain statement to the patient of the different methods, their probable results and hazards. The prerogative of choice lies with the patient.

B. Injections of alcohol make subsequent more radical operation no more difficult or dangerous.

C. When the patient is exhausted by long-continued pain and loss of sleep and is weak from lack of food the temporary relief afforded by alcohol injections enables him to recuperate and get into condition for operation.

D. Occasionally immediate relief is demanded, if possible. For instance, there came to me one day a robust woman of 46 years with very violent pains in supra-orbital and infra-orbital nerves. Though receiving hypodermics of morphin every day, she disturbed the neighbors with her screams. Her face was coated with a scum of old epidermis, residue of liniments and dirt. She would hardly wait until we could get some sort of history. Immediate injection of both nerves gave complete relief.

I venture to note that deep injections of alcohol are not good for migraine, sinus disease, alveolar abscess, brain tumor, brain abscess, syphilitic periostitis, brain syphilis, glaucoma, pressure of a septal spur or softening in the optic thalamus. And I venture to make this note because cases of all of these diseases have been sent to me for alcohol injections.

34 Washington Street.

Adhesive Plaster to Patch Automobile Tires.—Dr. Harry M. Wegeforth, San Diego, Cal., writes: "I would like to call the attention of physicians, who have automobiles, to the fact that the quickest way to patch a puncture of an automobile tire is to use a piece of adhesive plaster. I have used it a number of times with success. The idea is simply to clean up the rubber around the puncture and apply a piece of adhesive 3 or 4 inches square, sometimes putting on several thicknesses."

A PRACTICAL METHOD FOR THE CONTROL OF TYPHOID FEVER

AS APPLIED TO THE WATERSHED OF BALTIMORE *

MARSHALL LANGTON PRICE, M.D.
Secretary State Department of Health of Maryland
WILLIAM ROYAL STOKES, M.D.
Chief, Bureau of Bacteriology
AND
C. W. G. ROHRER, M.D.
Acting Chief, Bureau of Communicable Diseases
BALTIMORE

Whatever may be the difference of opinion among sanitarians as to the best means of dealing with the corollary problems involved in the propagation, transmission and implantation of the *Bacillus typhosus*, there is certainly unanimity of opinion as far as the fundamental problem is concerned.

Given the fact that the typhoid bacillus does not propagate outside of the human body and given that each case can be recognized from or before the beginning of its infective stage, the solution of the problem resolves itself into the immediate destruction of the bacillus at the time it leaves the body of the patient with the bodily excretions.

It would appear, then, that under a proper system of control the only two elements necessary to eliminate typhoid fever as a cause of sickness or death would be proper diagnosis (and by the word proper we mean a diagnosis that is both correct and immediate) and bedside disinfection. On the other hand, "proper control" introduces a third element into the situation, namely, registration or notification. Proper notification also necessarily implies immediate and correct notification.

The necessity for registration lies mainly in the adoption of standard and uniform methods of control of an approved character, and such standards can only be adopted and enforced by the state or sanitary authority having jurisdiction in the premises. The public danger involved is certainly sufficient warrant for the state to require cases of typhoid fever to be cared for under such regulations as the state may prescribe.

It will be clearly evident that any system of control must necessarily be based on diagnosis and it must be also admitted that many of the difficulties of diagnosis are almost insuperable. Under the best of conditions there will be large numbers of mild ambulant cases and bacillus-carriers that will escape the most vigilant observation on the part of either the attending physician or the health officer.

For these reasons, the whole solution of the problem of the control of typhoid fever will never lie in bedside disinfection alone, though bedside disinfection is, at the present, the most important and logical method for the control of typhoid fever and will be of increasing importance as diagnostic methods improve in accuracy and efficiency.

The plan which we have devised for the control of typhoid fever on the watershed of Baltimore, while only applicable to some thirty or forty cases annually, is a plan that we have had in mind for some time for universal adoption throughout the state as soon as the necessary money and authority is furnished by the legislature.

During the administration of Water-Engineer Quick, the water department of Baltimore has made numerous efforts to prevent or at least mitigate pollutions of the water-supply from cases of typhoid fever on the watersheds. In addition to the various legal methods of

* From the State Department of Health of Maryland, Baltimore.

general and specific character to restrain and prevent the entry of human sewage into the water-supply, all of which it is unnecessary to consider here, the water board has endeavored as far as possible, to locate the cases of typhoid fever on the watersheds and to have each case visited by an inspector. The inspector has always endeavored to secure the cooperation of the family in some method of bedside disinfection. In most instances the family has ecoperated as far as possible, under the circumstances of the case, but in other cases the efforts of the inspectors have been met with indifference, if not with actual hostility.

To secure adequate bedside disinfection is not as easy a matter as might at first appear. It is necessary to secure utensils which are often not at hand in the average household, the family must go to the trouble and expense of buying disinfectant and all of the methods employed may be useless on account of the inferior or worthless character of the disinfectant, improper care in mixing, or too short exposure to the effects of the germicide.

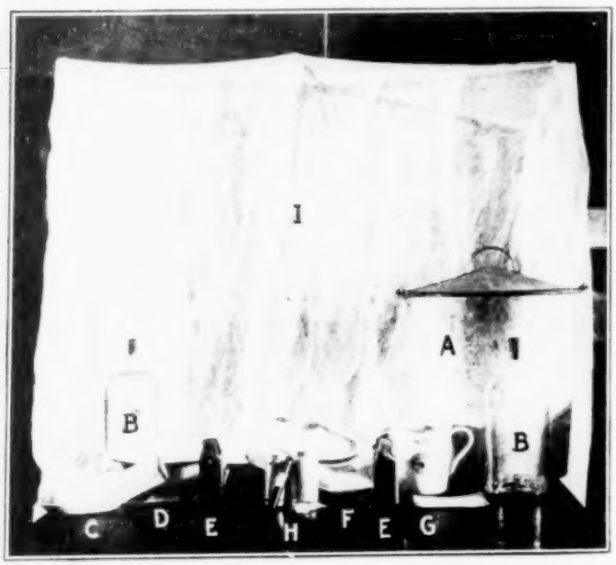


Fig. 1.—Standard typhoid prophylactic outfit. A, one of the 5-gallon buckets; B, carbolic acid (phenol) 90 per cent.; C, urinal; D, enamel basin; E, mercuric bichlorid tablets; F, bed-pan; G, enamel measure; H, lactose bile outfit; I, mosquito netting canopy.

For these reasons, in consultation with the water board, we devised some special outfits to be delivered by the inspectors at the patient's home with full directions for their use. Printed instructions are also left by the inspectors for the attending physician, nurses or other attendants. These materials are specified in the circular which appears below, "Directions for the Use of the Standard Prophylactic Package for Typhoid Fever."

It may be stated here that the water-supply of Baltimore comprises two distinct and separate watersheds, known as the Lake Roland Water-System and the Gunpowder River Water-System, respectively. Under normal conditions about one-half of the city is supplied by the Lake Roland Water-System and the other half by the Gunpowder River Water-System. On the average about forty cases of typhoid fever are registered on the two watersheds during the year. Both watersheds are subject to pollution, but that of the Lake Roland Water-System is mainly direct while the pollutions on the Gunpowder River Watershed are mainly indirect.

The system of control adopted by the water board is about as follows: As soon as a case of typhoid fever on either watershed has been notified to the county health officer, as the law provides, duplicate copies are at once sent to this department and to the water board of Baltimore. An inspector then carries to the household one of the standard packages, which he unpacks, makes up the necessary disinfectant solutions and explains fully their method of use. Enough disinfectant is provided to last four weeks. The inspector is also supposed to see that the physician and the attendant or nurse receive a printed copy of the directions printed below; he also gives them as many oral instructions as are practicable. He may again visit the household during the course of the patient's illness, in order to see if his instructions and the regulations of the state department of health, have been complied with. After the recovery of the patient he removes all the vessels and utensils listed as non-expendable, which after cleansing and disinfection, are repacked with additional disinfectant and are then ready for reissue to another case.

In order to enforce the proper carrying out of bedside disinfection, the State Board of Health has adopted and promulgated by publication the regulations set forth in General Order 39, which has been incorporated in the pamphlet already referred to.

This pamphlet reads as follows:

DIRECTIONS FOR THE USE OF THE STANDARD PROPHYLACTIC PACKAGE FOR TYPHOID FEVER

DIRECTIONS FOR USING OUTFIT

INSTRUCTIONS TO INSPECTORS

The inspector, as soon as he reaches the household in which there is a case of typhoid fever, should unpack the package and prepare the necessary disinfectant solutions and demonstrate their use to the physician, nurse, or attendant on the sick person.

1. In one of the large buckets make up five gallons of disinfectant, as follows:—with the agate-ware measure, measure out 19 quarts of hydrant or well water and 1 quart of 90 per cent. carbolic acid (phenol). This will make sufficient disinfectant to last for 10 days.

The other large bucket should remain empty. Instructions should be given the nurse or attendant every time the urinal is used to empty it into the large empty bucket and to wash out the urinal with a quantity of disinfectant out of the other bucket equal to the amount of urine passed. The agate-ware measure should be used to measure out the disinfectant.

The inspector should also instruct the nurse or attendant whenever the bed-pan is used to wash it out with an amount of disinfectant from the solution in the bucket at least equal to the quantity of feces and urine passed into the bed-pan.

The nurse or attendant should be enjoined to receive all discharges in the bed-pan or urinal and to empty them into the second iron bucket and not to dispose of them in any other way.

Before leaving the house the inspector should secure a broom-stick or iron poker and instruct the nurse or attendant to thoroughly mix the contents of the bucket every time a fresh quantity of stools or urine is poured into it. The broom-stick or poker should be kept permanently in the bucket in which the discharges are disinfected, but may be lifted out temporarily when a fresh quantity of material is added in order to avoid contaminating the parts which come in contact with the hand.

After the case has recovered the broom-stick should be destroyed by burning, or if a poker is used it should be heated red-hot in the fire throughout its whole length.

The bucket should be emptied at least once daily, and a period of two hours should elapse from the time the last discharges have been poured into it before the bucket is emptied.

The inspector should warn the family of the poisonous character of the disinfectants and should also impress on them the danger of spreading the disease to others, if the discharges are not properly disinfected. He should also ask the family to call the attention of the nurse and physician to their special instructions which follow.

2. The inspector should place the enamel-ware basin on a table somewhere near the patient, or at any rate in the same room. He should then drop in three tablets of bichloride of mercury into the basin and add three pints of water with the agate-ware measure.

Nurses, attendants, or other persons caring for the sick person should be carefully warned to immerse the hands in this solution for one minute, vigorously washing during this time, after bathing the patient, changing the bed linen, handling bed-pans or urinals, handling ice-caps, or in any other way coming in contact with the patient or the discharges from the patient. This solution should be made up fresh every other day.

3. Before leaving the premises the inspector should endeavor to secure a wooden or fiber wash-tub and place it outside the door of the sick-room. Into this tub throw 32 of the bichlorid tablets, and with the agate-ware measure add 80 quarts of water. The nurses and attendants should be carefully instructed that whenever the bed-linen or clothing of the patient is changed it should be thrown into the tub and soaked over night before being laundered.

4. Separate table-ware, eating and drinking utensils, should be provided for the patient, and may be disinfected by boiling in a large dish-pan. Table napkins, towels and handkerchiefs may be placed in the solution in the wash-tub with the bed-linen.

5. Before leaving, the inspector should place the large mosquito netting over the patient's bed and call the attention of the nurse, and attendant, and family to its importance in preventing the transfer of infectious materials to food through flies, and also how much it will add to the comfort of the patient by keeping away flies and mosquitoes.

6. Inspectors should carefully point out to physicians and nurses the instructions under the subheadings, "Instructions to Physicians," and "Instructions to Nurses," respectively. A copy of General Order No. 39 should be placed in the hands of the nurse or attendant, another copy should be given to the householder, and a third copy to the physician if possible. The two bile culture outfits should be left with the nurse or householder for the physician.

INSTRUCTIONS TO PHYSICIANS

1. Physicians are requested to read over carefully the instructions to inspectors and to see that the measures instituted by the inspectors are continued during the illness of the patient.

2. Attention of physicians is called to the provisions of General Order No. 39, especially to paragraph 2, *et seq.*

3. The attention of physicians is especially called to the importance of determining when the feces and urine of the convalescent are free from typhoid bacilli. This matter is extremely important, since one convalescent or one chronic carrier case is capable of producing a widespread epidemic of typhoid fever. Special mailing outfits, containing sterile bile and full directions for making cultures from the discharges, will be found in the outfit.

INSTRUCTIONS TO NURSES

1. Nurses, or attendants, and householders are requested to read over carefully the instructions to inspectors, and to see that the measures instituted by the inspectors are continued during the illness of the patient.

2. Attention is called to provisions of General Order No. 39, especially paragraphs 1, *et seq.* Attention of nurses is especially called to the great importance of thoroughly disinfecting all discharges in order to prevent the spread of typhoid fever through water-supplies, milk, and by flies, or by other means.

GENERAL ORDER NO. 39

REGULATIONS TO PREVENT THE SPREAD OF TYPHOID FEVER THROUGH THE DISCHARGE OF INFECTED PERSONS

In accordance with the provisions of Section 70 of Article 43 of the Code of Public General Laws, the following regulations are hereby promulgated:

1. It shall be the duty of any householder when he shall have reason to know or suspect that a person within his family or house is sick of typhoid fever, to cause the stools and urine of such persons to be properly disinfected according to a method approved by the state board of health, during the full period of sickness and convalescence of such person.
2. It shall be the duty of any physician, nurse or attendant, attending upon or caring for any person known or suspected to be sick of typhoid fever or convalescent from said disease, to cause the stools and urine to be properly disinfected according to a method approved by the state board of health, during the full period of sickness and convalescence of such person.
3. Any person violating the provisions of these regulations will be subject to the penalties provided by Section 70 of the said Article 43.
4. These regulations having been passed by the State Board of Health at a regular meeting, June 1, 1911, and having been duly promulgated, have the force of law.

By order of the State Board of Health.
MARSHALL LANGTON PRICE, SECRETARY.
6 E. Franklin St., Baltimore, June 7, 1911.

So far as we know, this is the first attempt made by the sanitary authorities to directly regulate and control the practice of bedside disinfection.

The outfit used by the inspectors contains a mailing case for sending bile cultures to the bacteriologic laboratory, and this is for the purpose of determining when the stools are free from typhoid bacilli. When the disinfection of the stools is about to be discontinued the attending physician is requested to send a specimen from the stools to the laboratory, and the inoculated bile is plated out and examined for the presence of the typhoid bacilli. If the stools still contain colonies of typhoid bacilli the family is furnished with more disinfectant, and the stools of the convalescent are required to be disinfected until typhoid bacilli are no longer present in the stools or urine. The outfit for sending bile specimens of feces and urine through the mail has already been described in an article by Stokes and Stoner,[1] and a quotation from this article which follows will describe this outfit in detail.

The specimen for examination is placed in 10 c.c. of Conradi's bile medium in a test-tube, stoppered with a rubber stopper, and covered with a rubber cap. This test-tube is then placed in a cylindrical tin box made of I. C. bright tin plate with soldered joints. This box is closed by a metal screw-cover and a rubber or felt washer. The test-tube in the box is completely and evenly surrounded on all sides by closely packed absorbent cotton. The box with its contents is now placed upside down in a larger box prepared in exactly the same manner except that it is lined on the inside with compressed paper not less than 3/16 of an inch in thickness to hold the inner box snugly. This outfit is shown in Figure 2.

For work within the city limits we use a simpler outfit which cannot be sent through the mail. These outfits are distributed bimonthly to our culture stations; the physician inoculates the tube of bile medium with feces or urine, and sends it by a messenger to the laboratory. The tube containing bile medium has a rubber stopper and is wrapped in cotton and placed in a cylindrical pasteboard box with a screw top.

The outfit also contains a swab for inoculating the bile medium with feces, and the directions for obtaining cultures from the feces and urine in cases of convalescent and carrier cases follow:

Directions for cultures from the feces and urine of cases of typhoid fever, paratyphoid infections, epidemic dysentery and convalescent or carrier cases from such diseases.

Fig. 2.—Lactose bile outfit for typhoid specimens.

Fifteen drops of urine should be put in the bile tube in order to detect the presence of the bacteria in this fluid. In order to take a culture from the feces, simply obtain about 1 gm. or 15 grains of the feces on the cotton swab which will be found in the outfit. Rub this up in the bile and then burn the swab. Place the bile tube in the outfit in the same way it was found, and send to the department. Wrap the bile tube carefully in cotton before replacing it in the case. Please fill out the blanks to be found in the outfit.

These outfits cannot be sent by mail.

Since this method has been in use in Baltimore we have studied thirty-nine cultures from the stools, and the typhoid bacillus was isolated from eleven, or 28 per cent., of these cases, and the paratyphoid from nine, or 23 per cent., of the cases. Five of these positive cases were from typhoid carriers, two of which had caused outbreaks of typhoid fever.

Several culture materials are useful in isolating the typhoid bacillus from the stools, and litmus-lactose-agar plates or Endo plates may be used. We have preferred to use a modification of the semisolid agar devised by Hesse, and this medium is described in an article by Stokes and Hachtel,[2] as follows:

Jackson, in his article, describes very thoroughly the evolution of a differential medium for the typhoid bacillus, but as the latest medium seems to be the most successful, we shall

1. Jour. Infect. Dis., 1910, vii, 257.

2. Arch. Int. Med., 1910, vi, 121.

simply describe Hesse's semi-fluid medium, including our own modification, quoting from the aforementioned article in a somewhat condensed manner.

The formula of the medium is as follows:

Agar (dried at 105 C. for half an hour)	5.5	gm.
Liebig's extract of beef	5	gm.
Peptone (Witte)	10	gm.
Lactose	10	gm.
Glycerin	50	gm.
Sodium chlorid	8.5	gm.
Distilled water	1,000	c. c.

Before using, the agar should be dried at 105 C. for half an hour to free it from all moisture. This medium should be kept in an ice-chest, the air of which is artificially provided with moisture.

The agar is dissolved in 500 c.c. of distilled water by heating and the loss by evaporation is made up. The peptone, lactose, beef extract and salt are dissolved in another vessel containing 500 c.c. of distilled water and the loss of weight by evaporation is made up by the addition of distilled water. The two solutions are then mixed and boiled for thirty minutes, the loss of weight being again made up by the further addition of distilled water.

It is next filtered, the reaction corrected to a neutral reaction and the 100 c.c. of glycerin added, and 10 c.c. are placed in each test tube. It is then autoclaved at 15 pounds pressure for twenty minutes and stored in the ice-box.

When the bile culture is received at the laboratory it is incubated for twenty-four hours, and a series of dilutions from the incubated bile is then made in the following way:

One loopful of the incubated bile is transferred into a water blank, which is shaken, and one loopful from this water blank is transferred into a second water blank. A series of eight dilutions is then made in the melted Hesse medium, cooled to 40 C., and the medium from each tube is then poured into a separate plate. The plates are then incubated for twenty-four hours, and if the typhoid bacillus is present the colonies will appear as medium sized, with concentric rings, the colonies showing a distinct pink color. This enables one to distinguish between the typhoid bacillus and the *Bacillus alkaligenes*, and the large size of the typhoid colony is due to its motility. We have found this medium of great service in detecting the presence of typhoid colonies from stools, and when suspicious colonies are obtained a small quantity is mixed in a proper dilution of an immune serum or known typhoid blood. If agglutination takes place the diagnosis is confirmed by a study of the cultural characteristics.

The above method has been described in detail because we consider it very important that the stools of patients, and convalescents from typhoid fever, should be examined at intervals until they are declared free from typhoid bacilli. As long as the stools remain positive they should be disinfected with the 5 per cent. phenol solution, and it is our belief that negative cultures from typhoid cases should be required in the same way that negative cultures from throats which have been infected with the diphtheria bacillus are required at present. By observing these two measures, namely, the careful disinfection of the stools and urine, and the examination of these materials until they are free from typhoid bacilli, we believe that the starting-point of what might otherwise be many cases of typhoid fever can be removed, and we think that this is the most important source at which to attack the spread of typhoid fever throughout the community.

6 East Franklin Street.

THE COMPARATIVE MERITS OF SEVERAL ANESTHETICS

MYRON METZENBAUM, B.S., M.D.
CLEVELAND

The department of anesthesia has made strides commensurate with those made by any other department of medicine or surgery, and the reasons for administering a certain anesthetic in a definite manner are now based on experimental as well as clinical findings.

During the past twelve years I have dwelt on four points as important to anesthesia, all of which are now generally accepted.

1. Chloroform must be considered as a dangerous anesthetic even in the hands of an expert.

2. Ether is administered best by what I have termed "ether-air-anesthesia by the drop method,"[1] that is, administering warm ether, drop by drop, on an open mask, the same as is used in giving chloroform, thereby mixing it with quantities of air, inducing anesthesia gradually. By this method ether can be used more universally than any other known anesthetic.

3. From 1/200 to 1/100 grain scopolamin (hyoscin) hydrobromid,[2] combined with 1/8 to 1/4 grain morphin, should be administered by mouth or hypodermic injection one-half to one hour before a general anesthetic or any extensive operation under local anesthesia, excepting in those above 55 or in the very young, and in febrile patients. These drugs dull the sensibilities so as to lessen materially, and often to prevent, the dangerous element of fear from exhausting the patient before the operation.

Morphin and scopolamin produce a very considerable amount of anesthesia of a desirable form, without the element of danger. They lessen the amount of general anesthesia otherwise necessary. Their influence on respiration must be taken into account when giving an anesthetic. Scopolamin, like atropin, prevents reflex stimuli coming through the superior laryngeal nerve or its branches from causing a sudden inhibitory stoppage of the heart, thus safeguarding the patient in operations of the throat and neck.

4. A skilful professional anesthetist[3] is always desirable. The successful outcome of an operation depends, in a large measure, on how carefully an anesthetic is administered without inducing fear or fright, how completely it is maintained and how mildly it is given. The professional anesthetist, by years of study and practice, becomes as skilful in the administration of the anesthetic as the surgeon in performing the operation. A well-administered anesthetic is a valuable factor, not only during the operation, but also to the postoperative stage.

The administration of *warm* nitrous oxid-oxygen anesthesia has been developed, in Cleveland, to a state close to perfection. The patients pass quietly under the anesthetic, are sufficiently relaxed for any abdominal operation, and can be kept under it with greater safety for even a longer period than with chloroform or ether. They awaken and are in possession of their faculties almost immediately, which proves that the anesthetic has ceased its action on the brain. There is no irritation or

1. Metzenbaum, Myron: Ether-Air Anesthesia or the Drop Method for the Administration of Ether; 650 Cases, THE JOURNAL A. M. A., Nov. 17, 1906, p. 1653.

2. Metzenbaum, Myron: Hyoscin-Hydrobromid as an Adjunct to Cocain Anesthesia and as a Preventive to Cocain Poisoning, Ohio State Med. Jour., December, 1910.

3. Metzenbaum, Myron: The Professional Anesthetist and Anesthesia, Ohio State Med. Jour., September, 1908; see also Ohio State Med. Jour., March, 1910, and the Laryngoscope, January, 1911.

congestion to the lungs with pulmonary sequences. Suppression of urine and albuminuria are almost unknown; jaundice does not occur; the color soon returns to normal. In a series of seventy-five comparative cases in Crile's clinic, the average pulse-rate, covering the first twenty-four hours, showed that ether increased the pulse-rate eight beats, while nitrous oxid with oxygen decreased the pulse-rate ten beats. Nitrous oxid-oxygen does not contribute to a postanesthetic depression. In infectious cases it does not seem to lessen the immunity of the patient as does chloroform or ether.

An anesthetic puts to sleep only the sensory areas of the brain and holds in check the natural reflex-actions to prevent or resist the injury being done to the parts during the operation. But the anesthetic does not put to sleep the entire brain and prevent all destructive impulses from reaching the cortical brain-cells.

Crile's recent experimental researches have shown that, in dogs in which death was similarly induced by shock, the destruction of the cortical brain-cells was far greater under ether anesthesia than under nitrous oxid-oxygen anesthesia, which leads to the conclusion that ether itself must have some destructive action on the cortical brain-cells, or that nitrous oxid-oxygen in some manner prevents injurious impulses from reaching the brain-cells. Crile's experiments have further shown that if, in addition to the general anesthetic, 1/400 per cent. novocain or 1/500 per cent. cocain solution be injected into the skin, tissues, nerves and nerve-trunks of the field of operation, painful impulses are further blocked from reaching the brain-cells at the time of the operation. If a 1 per cent. quinin urea solution is generously injected into the tissues of the field of operation, at the end of the operation, a lasting anesthesia is established, often for a period of twenty-four hours, thus preventing subsequent painful impulses from exhausting the cortical brain-cells. The application of the double or combined anesthesia has been of very great clinical value in casualty surgery, operations for exophthalmic goiter, and in operations on the young and the aged and in critical surgical cases. In many of these precarious cases the operations have been withstood exceptionally well. This combined anesthesia is a decided contribution to surgery and is a potent method of preventing, in a large degree, in certain classes of patients, that state which is termed shock.

706 Rose Building.

OPERATING CYSTOSCOPE FOR REMOVING PEDUNCULATED TUMORS*

HENRY MEYER, M.D.
SAN FRANCISCO

It is acknowledged that pedunculated tumors in the bladder, when not large, are best treated by removal with the operating cystoscope. After the removal of papillomata from the bladder by the open method, the growths have returned rapidly in the majority of cases and often in great numbers; while when they are removed with the operating cystoscope, recurrences are quite uncommon; so that to-day the removal of such neoplasms, when small and pedunculated, with the operating cystoscope, is the acknowledged operation of choice.

* Demonstrated before the San Francisco County Medical Society, Oct. 17, 1911.

The illustrations show a new instrument built for me according to my own ideas of the desiderata for an instrument intended for the removal of pedunculated tumors from the bladder; its simplicity is sufficient to recommend it to all who can appreciate work of this description. I can do everything with the Nitze instrument that I can do with my own in the treatment of bladder tumors, but with my instrument I can accomplish as much at one sitting, which completes the operation, as I can accomplish at two or more sittings with the Nitze instrument. My new instrument embodies the principles of clamp and cautery in one, acting simultaneously. The advantages of the new instrument are the following:

1. The snare problem is eliminated. The snare must be placed over the tumor and if we intend to employ the hot snare, which is the most desirable, we must use platinum wire, which is very soft and occasionally causes us annoyance by deviating to one side, or forward or backward; or its shape may become distorted if it happens to touch the tumor or bladder-wall, on account of the great flexibility of the wire. Then again, it does not always catch the tumor close to its attachment, and we must cauterize the stump with the cautery at another sitting. The new instrument is so constructed that its branches go under the tumor and at the same time lifts it, thereby catching the mucous membrane immediately around the tumor and destroys it.

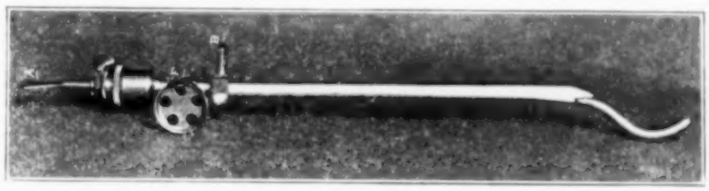


Fig. 1.—Operating cystoscope ready for insertion into the bladder. A, handle of the mandrin; B, contacts for cautery; F, wheel to open and close the clamp.

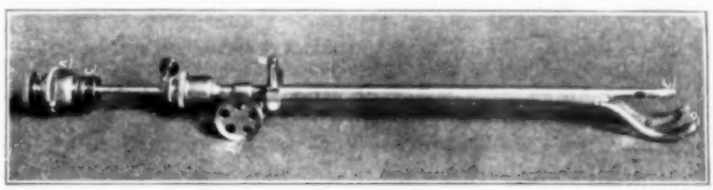


Fig. 2.—Instrument open, with cystoscope inserted, ready for use. A, cystoscope; B, contact for cautery; C, contact for lamp; D, double cautery, one on each blade of the instrument; E, cystoscopic lamp; F, wheel to open and close the cauterizing clamp.
The illustrations are one-half the size of the instrument.

2. It is much easier for a person expert in the use of the cystoscope to learn to use my instrument than the Nitze instrument.

3. This instrument can be used to remove a foreign body from the bladder, such as a piece of catheter, with the greatest ease. It can crush a small vesical calculus, and thus is a combination instrument.

4. Men who have seen this instrument and who know from experience the difficulties which we must overcome in order to obtain perfection in the performance of this class of operations, consider it the best instrument to accomplish the work for which it was intended. It was built as a result of my experience with the Nitze instrument, with which I have performed twenty-nine operations. The experiments made with this instrument were all done on the cadaver by sewing pieces of sponge to the mucosa of the bladder and in the manikin, and in

each instance the artificial tumors were grasped with a degree of ease impossible with any other instrument.

5. Operations done with the clamp and cautery are practically bloodless, which is no small factor in this class of work. These operations are carried out in the surgeon's office without anesthesia and the patients immediately resume their occupations. To use the instrument successfully, I would advise that the bladder be distended with 200 to 250 c.c. of clear sterile water.

The complete Nitze instrument is a combination of three instruments, and one must be able to judge which one to use, depending on the situation of the tumor; while my one instrument will reach every tumor that can be reached with any part of the Nitze instrument.

240 Stockton Street.

EXOPHTHALMIC GOITER AND SYMMETRICAL LIPOMATOSIS

LOUIS NEUWELT, A.B., M.D.

Assistant Surgeon and Chief of the Surgical Clinic, Out-Patient Department, Washington Heights Hospital

NEW YORK

Patient.—M. S., an Austrian Polish Hebrew, aged 42, presser by occupation, was first seen April 12, 1909. Family history was negative for tuberculosis, rheumatism, gout, cancer, insanity and exophthalmos. The patient denied all venereal diseases. He used alcohol in large amounts, and had used it excessively since 10 years of age, his average lately being four glasses of whiskey and ten glasses of beer a day. His present condition dated back for two years, when he noticed a swelling in both pectoral areas and a tumor the size of a pea on right and left sides of the back of the neck, which grew rapidly and very often caused him severe cramp-like pains in the affected areas. About a year before examination other masses appeared, situated below the occiput, and six months later, at the back of the neck, mammary areas, abdomen, back and arms. The masses on the arms were diffuse and increased these limbs to twice their natural size (the rest of the body being emaciated), giving him the appearance of a man of tremendous muscular development; appetite was fairly good; bowels were regular. He had had occasional headaches. The chief complaint was severe cramp-like pain in these masses, particularly over the lower and back part of the neck.

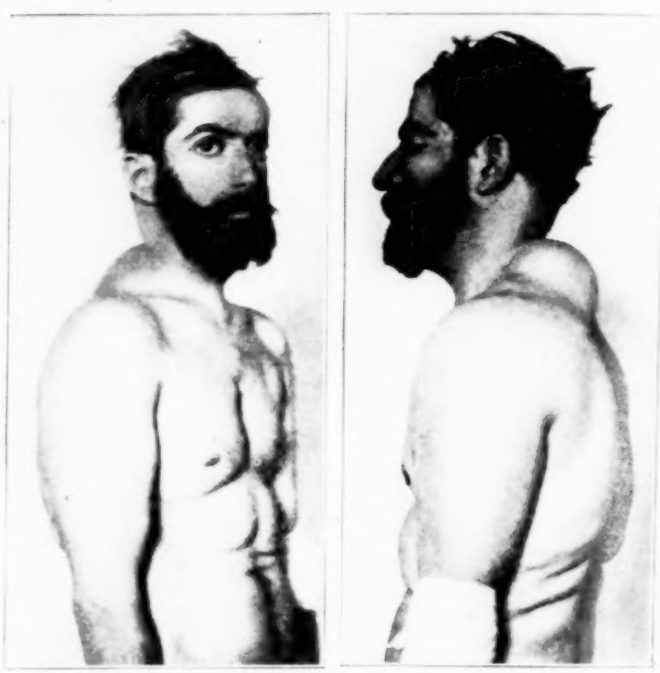
Examination.—At the first glance at the patient a marked exophthalmos was noticed with the positive von Graefe, Stellwag and Moebius signs. His hair was prematurely gray and sparse, with the remains of a former favus. There was a marked acne in the midline of the face. The cervical and inguinal glands were slightly enlarged. The eye-grounds were normal; pupils reacted to light and accommodation. Exophthalmos was very marked. The thyroid gland was distinctly palpable, feeling very much like a bag of worms, and moved with deglutition; both lobes and isthmus enlarged. The sizes of the tumors varied, from one the size of a pea to the largest, which was between the scapulæ, about 4 inches in diameter. The consistency of the tumors was that of cysts under low tension. The skin over the tumors was not freely movable, especially in the arms, where the fat seemed to infiltrate the skin. Temperature was 98.8 F. The pulse was variable and ranged between 92 and 120 within a half hour. Respirations numbered 21. The lungs, heart and abdomen were negative. The spleen was not enlarged. On extension of the hand there was a slight tremor. Knee-jerks were slightly increased.

Urine examination: Reaction acid, specific gravity 1.024. Albumin and sugar negative. Urea, 2.2 per cent.; indican and skatol normal. Microscopic examination showed a few pus and epithelial cells and no casts.

Blood examination: Hemoglobin, 79 per cent.; red blood-corpuscles, 4,240,000; white blood-corpuscles, 7,200. Differential count, polynuclears, 68 per cent.; small mononuclears, 19 per cent.; large mononuclears, 11 per cent., and eosinophils, 2 per cent. Wassermann reaction was negative.

Medicinal Treatment.—The patient was put on thyroid extract, 5 grains, three times a day, under careful supervision with the hope of influencing the fatty tumors and the goiter. After two days the pulse increased to 134 and the dose was reduced to 1 grain three times a day, which was continued for two weeks, during which time there was no appreciable diminution in the size of the tumors, but the patient's general condition was somewhat improved. He was then put on Fowler's solution, 5 minims, and saturated solution of potassium iodid, 10 minims, three times a day, when his pulse again came down to 120 and he felt much improved, with the exception of the tumor between the scapulæ, which pained him most, and he asked to have it removed for cosmetic reasons and for reasons of dress. He was admitted to the Washington Heights Hospital, Dec. 7, 1909. He had reduced his use of alcoholics to one glass of whiskey a day on promise of operation, and I intended to remove the interscapular lipoma.

Operation.—Dec. 9, 1909, under ether anesthesia lasting forty-five minutes, an elliptical incision was made over the



Exophthalmic goiter and symmetrical lipomatosis.

lipoma and an attempt was made to enucleate the lipoma, but this was abandoned because of the adherence to the skin and to the subjacent muscular layer. The tumor was ablated with difficulty. A rubber tissue-drain was inserted and the skin sutured with silkworm gut.

Postoperative History.—The subsequent history showed the onset of delirium tremens. December 10 he was restless and made attempts to leave the bed. Slept little. He was given whiskey half an ounce every four hours with soft diet. He then became delirious, talking incoherently and picking at the bed-clothes and finally was put in a strait-jacket. He was also given triple bromid 20 grains every three hours, with little or no effect. He was then given chloral hydrate 15 grains every four hours, whiskey one-half ounce. Temperature, 102.5; pulse, 108; respiration, 32.

December 11 he refused to eat; temperature was 103.4; pulse, 116; respiration, 36. Extreme delirium almost maniacal.

December 12 temperature was 104.6; pulse, 130; respiration, 38. The patient's comatose condition ended in death.

Autopsy.—The operative field, with the exception of considerable oozing serum, showed no signs of infection. The

section of the removed tumor showed nothing but adipose tissue. The tumors were all situated symmetrically on both sides of the body, with the exception of the one removed, which was in the midline. There were no tumors below the level of the umbilicus.

As to the diagnosis of exophthalmic goiter, the marked exophthalmos with the positive von Graefe, Stelwag and Moebius signs, the enlarged thyroid and rapid pulse, tremors and extreme nervousness left no doubt as to the diagnosis.

2424 Seventh Avenue.

THREE OUTBREAKS OF TYPHOID FEVER TRACED TO MILK INFECTION

EDWIN O. JORDAN, PH.D.
AND
ERNEST E. IRONS, M.D.
CHICAGO

The outbreaks of typhoid fever here briefly described are put on record partly because of certain special features they present, partly because of our conviction that the frequency with which typhoid fever in this country is milk-borne needs to be more widely known.

I. LAGRANGE EPIDEMIC

This outbreak occurred in the autumn of 1899 in the village of LaGrange, a suburb of Chicago. A partial house-to-house canvass which we made under the auspices of the local board of health, together with information obtained by the aid of physicians, disclosed the existence of forty-five cases developing in the months of September, October, November and December, 1899. This was in the ratio of about one case to every ninety inhabitants, while in the adjoining city of Chicago during the same period the typhoid rate, as estimated from the number of deaths, was about 1 to 1,000. There was thus no doubt that the amount of typhoid fever in LaGrange had been excessive for that season and locality.

The water-supply of the town was derived from a deep well, and inspection of the surroundings showed no ground for suspecting contamination of the source. This opinion was confirmed by a number of analyses, bacterial and chemical, of the water obtained direct from the well and also from taps in various parts of the town. *B. coli* was not found in water from well or tap. The view was held by some citizens that the water from a disused reservoir, which had been pumped into the mains during an emergency caused by a fire on August 27, was responsible for the outbreak. No source of contamination of the reservoir water was apparent, however, and the distribution of cases was such as to weaken the hypothesis of infection having occurred on that date. *B. coli* was not found in the reservoir water. Finally the order in which the cases developed effectually disposed of the belief that the epidemic was an explosive outbreak due to water infection. Tabulation of the cases showed that twenty-five of the forty-five cases had occurred on one milk-route (X), eleven on another (Y) and only nine on all the other milk-routes in LaGrange. Five different milk-supplies were represented among the nine cases not on Routes X and Y. The number of customers on the different milk-routes—two with many cases, five with few—was not exactly ascertainable, but so far as could be learned each of the seven routes supplied about the same number of families, except Route Y, which was far less extensive than the others. The following table shows the order of development and the distribution of cases on the several milk-routes:

Cases developing in weeks ending	Routes		
	X	Y	All Others
September 3	2	0	0
September 10	2	0	1
September 17	2	1	0
September 24	0	0	0
October 1	0	0	0
October 8	0	0	1
October 15	1	3	1
October 22	2	0	1
October 29	1	0	0
November 5	0	0	2
November 12	3	0	0
November 19	6	0	0
November 26	1	0	1
December 3	2	4	0
December 10	3	1	1
December 17	0	1	0
December 24	0	0	1
December 31	0	1	0
	25	11	9

There was hence no reason to postulate a water infection on August 27, but rather an infection of the milk delivered by two dealers. The age distribution of the cases bore out this view: no fewer than sixteen of the forty-five cases were in children under 10 years of age, while only five were in persons between 20 and 30. As regards the nine cases occurring on other routes than X or Y, it was found that eight of these cases could be accounted for on the hypothesis of contact or out-of-town infection.

Further investigation showed that a case of typhoid fever had occurred on Farm Y just prior to the outbreak, and inspection of the premises showed that infected fecal matter could readily have found its way into the milk by way of a shallow well in porous soil 20 feet away from the outhouse in which undisinfected discharges had been emptied. The water of this well was used for rinsing the milk-cans. Flies also may have played a part in transmission. The individual who suffered from typhoid fever on the farm was said to have had nothing to do with handling the milk. At the time of our inquiry he had left the neighborhood and further investigation was blocked.

There was no evidence of direct infection of the milk produced on Farm X, but a large part of the milk produced on Farm Y was distributed on Route X throughout the period of the epidemic.

There thus remained little doubt that the majority of cases of typhoid fever occurring in LaGrange during the months of September, October, November and December, 1899, owed their origin to an infection of the milk produced on a certain farm (Y) and distributed on two milk-routes (X and Y).

II. HOOPESTON EPIDEMIC

The history of typhoid fever in Hooperston, a thriving manufacturing town in central Illinois, about 100 miles from Chicago (population, 1910, 4,698), is briefly as follows: Up to 1908 only a few scattered cases had occurred yearly; these were apparently not sufficiently numerous to cause serious alarm. In 1908 it is estimated there were at least ten cases, in 1909 about thirty, and in 1910 we secured a record of ninety-four cases, including three fatal cases, developing in the town itself between July 1 and November 2. Special interest attaches to the first appearance of cases in noteworthy numbers in the year 1908, as will be made clear presently.

A house-to-house canvass under the auspices of the board of health, covering all cases of typhoid fever of

which we could learn, was first undertaken. In this work we had the hearty cooperation of all physicians. Owing to removal, death and other causes we were able to fix the approximate date of onset in only seventy-eight of the ninety-four cases.

Tabulation of the cases follows:

	Milk Routes							
	M	G	A	B	C	All Others		Total
July 1-15	3	0	0	0	0	1		4
July 15-31	2	1	1	0	0	0		4
Aug. 1-15	6	0	0	0	0	1		7
Aug. 15-31	6	0	1	0	0	1		8
Sept. 1-15	6	0	0	0	0	4		10
Sept. 15-30	9	1	0	0	0	1		11
Oct. 1-15	8	7	1	0	0	4		20
Oct. 15-31	4	5	2	0	0	3		14
								78

The grouping of cases by ages showed the age-incidence characteristic of milk-borne epidemics.

Years	Cases	Years	Cases
0-5	7	31-45	10
5-15	33	45-	5
16-30	36		

The approximate number of customers on the five principal milk-routes, together with the cases of typhoid fever developing on each, is as follows:

Milk-Route	No. Customers	No. Cases Typhoid Fever July 1 November 2
M	150-200	44
G	40	14
A	200	5
B	50	0
C	25	0

It thus appears that the majority of cases developed among the customers on two milk-routes. Route G may be first considered. About September 1, the young daughter of the G family (aged 14) became ill with typhoid fever. The case was not a serious one. Before her illness and during her convalescence she assisted in the distribution of the milk and in work about the household and dairy. On September 27, a case of typhoid fever appeared among the G customers and this was followed by twelve others within a month. During this period four additional cases developed in the G family. In all, eighteen cases of typhoid fever could be traced to the first G case.

Milkman M supplied a larger number of customers than Milkman G and the number of cases on his route was correspondingly large (44). It is practically certain that the M milk was responsible for other cases of typhoid fever than those occurring among the private customers of M. It was found that the M milk was used (uncooked) by one large dealer (P) for making ice-cream. Twelve persons who had typhoid fever and were not on the M milk-route are known to have eaten P ice-cream, in several cases in large quantity, within two weeks of the onset of the disease. It seemed likely that in the first case on the G farm which gave rise to eighteen others, the patient contracted infection from the P ice-cream. M milk was delivered to several restaurants in the city, but we were not able to trace surely any specific cases of infection to this source. It is possible that three or more of the five cases occurring on milk-route A may have been due to infection with the M milk, since several times during the summer a few bottles of M milk were used by A to supply a temporary shortage.

Altogether the typhoid cases occurring in Hoopeston between July 1 and Nov. 2, 1910, may be tabulated as follows:

Cases due to infection contracted outside Hoopeston; certainly 1, probably 1	2
Cases due to M milk directly and indirectly	62
Cases possibly due to M milk	4
Cases due to G milk (including 4 cases in G family)	18
Cases due to miscellaneous causes (contact infection, visiting typhoid patients, etc.)	5
Cases unaccounted for	3
Not all facts ascertained	2
	96

Although no case of typhoid fever existed on the M farm during the summer of 1910, the origin of the epidemic seems sufficiently clear. We found that Mrs. M. had suffered from an attack of typhoid fever in 1896, and she was reasonably assumed to be a "carrier." Subsequent examinations of the feces of this woman showed the presence of bacilli corresponding culturally in all respects with the typhoid bacillus and agglutinating in high dilutions with the serum of an immunized rabbit. Thirteen months after the epidemic the feces still contained typhoid bacilli and the woman's blood gave the agglutination reaction. There were present on the M farm at the time of our visit ample possibilities for the spread of infection. Not even the usual country privy existed, and no proper disposition was made of the excretal refuse. Abundant opportunity existed for contamination of the milk through the agency of flies and in other ways. We found the water of the well close to the milk-house badly contaminated with fecal bacteria. It is a significant fact that typhoid fever first became conspicuous in Hoopeston in the year the M family entered the town (1908) and began distributing milk from a few cows. As the M milk-business prospered and the number of M customers increased, typhoid fever became more prevalent.

The especially interesting features of the Hoopeston epidemic are the occurrence of ice-cream infection, the infection of a second milk-route in addition to that primarily responsible, the steady increase in the amount of typhoid fever coincident with the increase in business of a particular milk-dealer and the large proportion of cases that could be traced directly or indirectly to milk, leaving relatively few to be accounted for by other modes of infection. Careful studies of case-groupings in respect to locality and time were made, and it is worthy of note as bearing on the frequency of fly transmission that, although both badly constructed privies and flies were not lacking in Hoopeston, this mode of typhoid communication does not seem to have been an important factor.

The epidemic ceased abruptly after the closing of the infected dairies. Only seven cases of typhoid have occurred in Hoopeston during the year which has elapsed since the investigation (from November, 1910, to December, 1911). Three of these are known to have been contracted in small epidemics elsewhere in the state, and two, and possibly three, of the remaining four are regarded by the board of health as imported cases.

III. HOTEL EPIDEMIC

In March and April, 1911, some ten or eleven persons resident in Chicago, New York, Philadelphia and other northern cities developed typhoid fever, shortly after their return from a winter hotel on the Gulf of Mexico. At the request of the hotel management, an investigation was made to determine the source of the infection.

The hotel grounds overlook a bay and are about a mile distant from a small village, and 27 miles from a large city. During the season (January 1 to April 1) the number of guests varied from 200 in January to 350 in February and March. Many of these guests came early

in January and remained throughout the season, so that the population of the hotel was unusually constant.

The investigation of this epidemic, undertaken five weeks after the closing of the hotel, presented difficulties not encountered in the investigation of communities with a fixed population. A careful inquiry into the previous health, previous and subsequent residence, diet, dates of onset of illness, etc., of the typhoid sufferers supplied valuable preliminary information. Several individuals (ten) had been residents at the hotel for from four to ten weeks before becoming ill and had had no demonstrable opportunity for contracting typhoid elsewhere. All ten developed typhoid within two weeks of the time of leaving the hotel. A tabulation of the dates of onset of illness showed that these were comprised within a relatively short period, March 17 to April 7. Within this short period a closer scrutiny showed two subgroups: March 17, one case, March 19, two cases, March 20, one case, or four cases March 17-20; March 27 and 30, one case each, April 1-4, three cases, April 7, one case, or six cases March 27-April 7.

Allowing for an average incubation period, and counting back ten to fourteen days, we have approximately the period March 1 to 20, or if we consider the subgroups we have two periods, March 1 to 10 and March 15 to 25, when something unusual happened. Furthermore, on extended inquiry we were unable to find that any guest became ill who left the hotel before March 1, and all who subsequently became ill arrived at the hotel before March 20. One additional probable case (No. 11) from whom we were unable to obtain full data left the hotel March 9, so that if the cases were due to a common cause it was operative as early as March 9.

A tabulation of the customary articles of diet of the ten individuals, such as oysters, fish, vegetables, showed no common factor which might serve as a clew to the source of the infection—likewise a sanitary survey of the hotel premises and a thorough examination of the water-supplies, epidemiologic, sanitary and bacteriologic, furnished no evidence that these had any causative relation to the epidemic.

Milk-Supply.—The milk-supply of the hotel was derived from two sources, (1) a local dairyman and (2) a wholesale distributing company in the city. There was no evidence of contamination at 1, and three private families who used this milk remained healthy. The distributing company furnished from 20 to 25 gallons of milk during the height of the season (February and March). This dairy company obtained milk from a number of dairies in or near the city, and distributed the mixed milk to its customers including the hotel and two other hotels in the city. Dairies A, B, C, D, E and F furnished milk in constant quantities from January 1 to April 1. With the exception of F, which was carelessly managed, these dairies were fairly clean and well conducted, and there was no history of typhoid among the employees. Dairies G, H and K, which furnished small amounts of milk during January and early February were somewhat inferior from a sanitary point of view, but the periods when they appeared in the general supply did not coincide with the period when the infection must have occurred. We had, therefore, no adequate evidence for thinking that the fever originated in the milk-supply. Further, several of the typhoid sufferers used no milk, and other guests drank much milk and remained well.

Cream-Supply.—The cream was furnished by the same wholesale distributing company, which in turn obtained it from sources L and M (wholesalers in neighboring states), from Dairies N and O, and from milk (by separator) obtained as indicated above. The latter supply together with that from L and M was constant throughout the season. Dairy N supplied cream in small amounts in January and February only.

Dairy O furnished cream to the wholesale company as follows:

Period 1.	January	3-8	—2 gallons per day.
Period 2.	January	16-18	—2 gallons per day.
Period 3.	February	3-8	—2 gallons per day.
Period 4.	March	7-10	—4 gallons per day.
Period 5.	March	14-24	—4 gallons per day.

The consignments during the first three periods were small, and we were informed that they were sent out in original packages to fill the orders of local drug-stores, and hence did not reach the general cream-supply. The daily consignments during the two later periods were larger, and though on some days they may have been sent to local dealers in original packages, we were informed that on other days they were mixed with the general supply, two-fifths of which went to the hotel. A portion of the remaining three-fifths went to Hotel Y. This hotel closed about April 1, and we were unable to obtain a subsequent record of the guests. One case of typhoid which occurred at this hotel during the season was thought to have been infected in another city. In the absence of records of the guests after leaving the hotel, no conclusions can be drawn as to the effect of the cream at Hotel Y, for such instances of typhoid as might occur would develop after the guests left the hotel, as was the case at the hotel under investigation. The remainder of the cream from the distributing company was supplied to drug-stores to be served in iced drinks.

Sanitary conditions in Dairy O were filthy. The milk-room (in the cow-barn) was unscreened and swarming with flies. Within 20 feet of the open cow-barn and 30 feet from the milk-room was an open, shallow, used privy. The methods of milking and handling the milk as witnessed by us were as objectionable as the surroundings.

On February 1, the owner of this dairy employed three new milkers to replace men previously discharged. One of these men had had typhoid fever some ten years previously. From the feces of this man we isolated the typhoid bacillus. There had been no illness on this farm at the time of our inquiry, but we have learned that shortly afterward two members of the family suffered from typhoid fever.

A portion of the milk from this dairy (total 100 gallons per day) was distributed to customers (60-70) on a retail milk-route belonging to the proprietor. The remainder of the milk was passed through a separator, and the cream, with the exception of that sold to the wholesale distributing company as indicated above, was delivered to local drug-stores through a second dairy company.

Typhoid fever is present every year in the city, but during March and April, 1911, the cases began to increase so that we estimated their number at from 100 to 200. A tabulation of facts concerning some thirty unselected cases showed no common factor such as milk-supply, etc., but in a number of instances there was a history of the taking of iced drinks containing cream in drug-stores. This indirect method of infection is probably responsible for a portion of the total cases. Incidentally we learned of another dairy not in any way connected with our investigation in which there had

been two cases of typhoid fever within four months. Neighborhood infection by means of contaminated privies and flies may also have been a factor in the city epidemic.

The special features of this hotel epidemic are as follows: Ten guests contracted typhoid during their stay at a hotel. One group of four became ill March 17-20, and a second group of six, March 30-April 7. Allowing an average incubation period, the infection probably took place March 1-10 and March 15-25. The relative isolation of this hotel, and the prolonged residence there of the guests made it possible to exclude many of the ordinary sources of typhoid infection. On March 7-10 and March 14-24, certain unusual cream-supplies reached the hotel from a dairy where extremely insanitary conditions prevailed, and to which a typhoid carrier came on February 1. Cases of typhoid are also known to have occurred among the users of milk from this dairy, and among those who partook of its cream product in drug-stores.

From the public health point of view it is especially important to control the milk- and cream-supplies of hotels since a large number of persons may become infected and since infection contracted while traveling is often particularly difficult to trace. Under conditions such that the source cannot be satisfactorily controlled pasteurization of hotel cream and milk should be required.

STRANGULATED FEMORAL HERNIA

JOHN DOUGLAS, M.D.
Visiting Surgeon, Bellevue Hospital; Assistant Surgeon, St. Luke's Hospital
NEW YORK

Strangulated femoral hernia is a surgical condition in which early diagnosis and prompt operation result in a fairly low mortality; while failure to recognize the condition and consequent delay directly increase the danger and operative risk. The fact that a large proportion of these cases are not diagnosed promptly, or an incorrect diagnosis is made with a resulting delay of the necessary surgical treatment, prompts the writing of this paper, with the brief report of the following nine cases:

CASE 1.—R. W., woman, aged 54, had swelling in groin for two years, which had increased in size for past six weeks; vomiting four days before she was referred to Bellevue Hospital. Pain in swelling was complained of for only twenty-four hours before admission. Intestine was found blue and congested, but circulation returned and hernia was reduced and ring sutured. Patient was discharged as cured on twenty-ninth day.

CASE 2.—S. F., woman, aged 28, had swelling the size of a marble in groin for three years; had sharp pain in abdomen after lifting weight, four days before admission to Bellevue Hospital. Pain was accompanied by persistent vomiting and absolute constipation. On admission, gangrene with perforation of the strangulated intestine had been present a sufficient time to result in suppuration in the sac, and the formation of a mass resembling a broken-down bubo. General peritonitis was also present. The gangrenous intestine was resected and united by a Murphy button. Median abdominal incision was made to sponge and drain peritoneal cavity. Button was passed on twelfth day. Patient was discharged as cured on thirty-fifth day.

CASE 3.—Patient M.T., woman, aged 63. Strangulation was present for two days; treated as an enlarged gland and gastritis, until fecal vomiting appeared. Operation in private house. Color returned to middle of loop of strangulated intestine, but a band existed at both ends of the loop, where pressure on the sharp edge of Gimbernat's ligament had thinned out the intestinal wall to almost resemble tissue paper. Six inches of intestine were resected and united by a Murphy button, which was passed on the sixteenth day. Recovery followed.

CASE 4.—L. B., woman, aged 42, two days before admission to Bellevue Hospital had sharp pain in lower abdomen, followed by persistent vomiting, which became fecal; absolute constipation. Patient did not know she had a hernia; was sent into the hospital with a diagnosis of acute gastritis. Intestine was in bad condition; did not react. Resection of 2½ inches was performed and end-to-end anastomosis by suture through median abdominal incision. Bowels moved four times on third day after operation, and continued to move daily until seventh day. Patient did not vomit until seventh day. Temperature was high the day following operation and continued high until death on the seventh day. Post-mortem examination showed no leakage or obstruction at line of anastomosis, but an evidently virulent peritonitis with very little exudate.

CASE 5.—M. W., woman, aged 62, had swelling in groin for twenty-two years. Three days before admission to Bellevue Hospital, after eating corned beef and cabbage, she began to vomit and have abdominal pain; vomited for seventy-two hours. After forty-eight hours, vomitus became brown. Absolute constipation was present for five days. Operation showed strangulated small intestine in which the vitality had not been lost. Intestine was reduced and ring sutured. Patient was discharged as cured on twenty-first day.

CASE 6.—L. S., woman, aged 60, had swelling in groin for one year, which was treated as enlarged gland with ichthyol. Vomiting and pain were present twenty-four hours before admission to St. Luke's Hospital. Operation showed strangulated intestine in which the color returned to the middle of the intestinal loop, but the portions where the sharp edge of Gimbernat's ligament had caused pressure and constriction were sufficiently damaged to require resection. Resection of 5 inches was done through median abdominal incision; end-to-end anastomosis by suture. Patient was discharged as cured on nineteenth day.

CASE 7.—E. G., woman, aged 68, had hernia for fourteen years. Four days before admission to Bellevue Hospital she became nauseated and had abdominal pain. Hernia became large and irreducible and painful. Vomiting continued and became fecal. Absolute constipation existed three days before admission; patient in poor condition. Operation, under local anesthesia was rendered difficult by a partial ankylosis in semi-flexion of the hip, due to rheumatoid arthritis. Intestine was not damaged, and returned. Patient was discharged as cured on thirty-fifth day.

CASE 8.—M. B., woman, aged 41, had swelling in groin one month. Two days before admission to Bellevue Hospital, she was seized with sharp abdominal pain, and vomiting which became fecal. Mass became harder and more painful. Abdomen became distended and constipation was absolute. Operation showed a strangulated femoral hernia of the Richter type, in which the constricted portion had almost ulcerated through. Resection of 4 inches was done, with end-to-end anastomosis by suture. Patient was discharged as cured on twenty-eighth day.

CASE 9.—B. S., woman, aged 35, had had hernia for three years. It had always been reducible up to three days before admission to St. Luke's Hospital. There was no vomiting; bowels had not moved for two days; there was slight elevation of temperature. Flatness over mass; no impulse. Operation showed strangulated omentum, in sac very tense with fluid. Omentum was resected; ring closed. Patient was discharged as cured on fourteenth day.

The brief report of these nine cases shows the frequency of delay (two to four days) before operation was performed, and the errors of diagnosis, and failure to recognize the early necessity of surgical interference. Five of them required resection of the intestine. One patient died; of the four not requiring intestinal resection, all recovered. The damage to the intestine, however, does not depend alone on the length of time

constriction has been present but also, to a large extent, on the nature of the constriction — the larger hernias seeming to be less apt to be damaged than those with a small ring where a small knuckle of intestine, or even a Richter's hernia, is tightly constricted by the sharp edge of Gimbernat's ligament.

DIAGNOSIS

Femoral hernia occurs much more frequently in women than in men. The nine patients referred to above were all of the female sex. Of fifty-nine patients suffering from strangulated femoral hernia, from the records of St. Luke's and Bellevue Hospitals, only seven were men—a proportion of less than one in eight.

When the hernia is reducible, the diagnosis between the femoral and inguinal variety is made by the direction in which the sac contents return to the abdominal cavity, and the relations of the sac, and particularly of the neck of the sac, to Poupart's ligament and the pelvic spine. When strangulated, the differential diagnosis between femoral and inguinal hernia must be made by the relations of the tumor to the two anatomic landmarks above mentioned. One of the most frequent errors in diagnosis is the mistaking of a small strangulated femoral hernia for an enlarged or broken-down femoral gland. The impulse on coughing is lost and the percussion note when the sac fills with fluid is no longer tympanitic. When perforation and gangrene of the intestine occur, the signs of suppuration appear in the mass.

The above are the local visible signs. But in a number of cases strangulation of a femoral hernia occurs, in which the patient has not been aware of the previous existence of a hernia, and in which the general abdominal symptoms are so marked that the patient does not complain of the local condition, and unless the attending physician makes a careful physical examination, a diagnosis of acute gastritis or intestinal obstruction of unknown cause may be made. The case histories cited show that the first symptoms of strangulation are frequently general abdominal pain and vomiting, and even with a superficial examination, a small strangulated femoral hernia, especially in a fat woman, may escape detection. Hence, in every case of severe general abdominal pain with intractible vomiting, or when signs of intestinal obstruction are present, the femoral rings should be carefully examined.

TREATMENT

The facts that femoral hernia is especially liable to strangulation, and that it is with the greatest difficulty kept reduced and almost never cured by means of a truss, while operative treatment by practically any of the many different methods of operation for radical cure is nearly universally successful, indicate the wisdom of the advice of operation when the diagnosis of femoral hernia is made. Obviously, sufficiently early diagnosis and operation in the event of strangulation would eliminate the necessity of resection, and therefore greatly lessen the mortality.

When operating in the presence of strangulation, if after the relief of the constriction, usually by nicking or dividing Gimbernat's ligament, the color of the strangulated intestine returns to normal, showing that the intestine is viable, it should be returned to the abdominal cavity and the crural ring closed. If, after waiting, and the application of warm towels, the color does not return to normal, and the intestine or part thereof is obviously damaged, one of the several procedures may be done. In certain cases, the return of the circulation in the loop of the intestine is prevented by traction on the mesentery, in which event the intestine may be partly or entirely returned temporarily to the abdominal cavity for a short time until its viability can definitely be determined. The latter suggestion has recently been made by Plummer,[1] who writes that he could find no mention of it in the text-books. Surely the value of this suggestion is so obvious that it must have been used by other surgeons when it was evident that it was traction on the mesentery which prevented the return of circulation to the intestine. In the presence of any evidently gangrenous area on the intestine, or infection of the sac contents, the temporary return of the intestine risks infection of the general peritoneal cavity and, of course, should not be done.

It has been suggested that after relief of the constriction, if there is still question of the viability of the intestine, it may be left in place surrounded by gauze, wrung out in hot salt solution, until this question is determined, when it may be replaced and the hernia repaired or a resection done, as indicated, at a second operation (operation in two stages); or the doubtful intestine may be returned just within the ring and held near the opening by means of sutures, the hernial ring not being closed. These procedures are certainly preferable to returning damaged intestine to the free peritoneal cavity, but if a secondary resection should be necessary, the chances of recovery of the patient will probably not have been increased by the delay, and it would seem wiser to resect at once in doubtful cases.

It has also been suggested that in those cases in which the circulation returns to the loop of the intestine, except in a band where the pressure of Gimbernat's ligament has caused what is practically a pressure necrosis, as in Cases 3 and 4, the damaged area might be inverted without resection. Hodge[2] reports a case of intestinal obstruction following this operation, which necessitated a subsequent resection ninety-six hours later. This would seem a not unlikely result where any considerable breadth of intestine had to be inverted. Statistics also show the very high mortality (90 per cent. in the combined Bellevue and St. Luke's statistics) of cases in which an enterostomy has been done, although this is probably used only when the patient's condition has been allowed to become so desperate that a resection and anastomosis would almost certainly be fatal.

When the intestine is gangrenous or obviously damaged beyond viability, resection and anastomosis should be performed. Whether this can best be accomplished through the enlarged femoral opening or through a secondary abdominal incision will depend on the size of the enlarged femoral opening, and also on the length of the mesentery of the loop to be resected. If the mesentery is not sufficiently long, traction on the loop of the intestine interferes with its circulation, and in such cases an abdominal incision allows greater freedom in performing the anastomosis, and better judgment in determining the amount to resect, doing less damage to the intestine on each side of the anastomosis. Also, there is sometimes difficulty in returning the anastomosed intestine through a not greatly enlarged femoral ring. On the other hand, the performance of the anastomosis through a secondary abdominal incision necessitates the reduction of the damaged and perhaps gangrenous and infected intestine, and the carrying of it across a free, clean area of the peritoneal cavity to the

1. Plummer: Surg., Gynec. and Obst., June, 1911.
2. Hodge: Ann. Surg., 1908, xlix, 723.

second incision, with the danger of peritoneal infection. As to the method of anastomosis, whether lateral, end-to-end, by suture or Murphy button, depends on the speed, skill, familiarity with the operation, and personal preference of the surgeon. Lateral anastomosis can usually be performed more rapidly and is generally believed to be safer and easier than an end-to-end anastomosis, and is probably preferably done when operating through the secondary abdominal incision. It requires a longer loop of intestine, however, than it may be possible to pull down through the femoral ring in the event of a short mesentery, and in such cases an end-to-end anastomosis is preferable. Also, it is more difficult, or may be impossible, to return into the abdominal cavity without very greatly enlarging the femoral ring.

The method of closing the ring after tying off and displacing the neck of the sac, employed in the nine cases reported, was by means of a purse-string suture through Poupart's and Gimbernat's ligaments, the pectineus sheath and muscle, and the sheath of the femoral vessels. This has been found most satisfactory in these cases, as well as a number of non-strangulated femoral hernias. Sprengel, however, has collected fifty different methods of repair of femoral hernia, and Ochsner states that a cure will be effected by carefully tying off the sac alone. Recurrences, however, have occurred where no attempt has been made to unite the muscular and ligamentous strictures forming the crural ring, and is especially apt to occur where enlargement of the ring has been necessary to relieve constriction in a strangulated hernia.

Finally, as to the anesthetic: Relief of the constriction, reduction of the hernia, and repair of the ring, and even resection and anastomosis, can be obtained under morphin and local anesthesia, with very little pain in most cases, and in the presence of fecal vomiting, even after lavage, this is a safer, though slower method of procedure. However, in cases in which it is necessary to make considerable traction on the mesentery in order to resect, the pain is severe and a general anesthetic is necessary.

CONCLUSIONS

1. Because of the danger of strangulation and inability to cure by other than operative measures, operation should be advised when a diagnosis of femoral hernia is made.

2. Sufficiently early diagnosis and operation would prevent the necessity of intestinal resection, and thus lessen the mortality.

3. Intractable vomiting with pain, either abdominal or localized in the groin, especially in women, should indicate careful examination of the femoral rings, even before it is obvious that intestinal obstruction exists.

4. Operation should be performed as soon as the diagnosis of strangulated femoral hernia is made, if gentle attempts at reduction fail.

5. If the strangulated intestine is damaged beyond viability, resection and anastomosis should be performed. When there is a sufficiently long mesentery not to hamper the operation, this may be done through the primary incision made over the femoral ring; otherwise, a secondary abdominal incision should be made.

6. Except in the most desperate cases, when the patient's condition is so extremely bad that it is impossible to perform an anastomosis, an enterostomy, even as a temporary resort, should not be done.

145 West Eighty-First Street.

ON WHAT DO THE HYGIENIC AND THERAPEUTIC VIRTUES OF THE OPEN AIR DEPEND?*

HENRY SEWALL, PH.D., M.D.
Professor of Medicine in the University of Colorado
DENVER

Many of us can trace our first interest in the hygiene of ventilation to reading of the ghastly incidents of the Black Hole of Calcutta on a night in June of 1756. The "Hole" was a room, 18 or 20 feet square, having two small windows obstructed by a verandah. One hundred and forty-six Europeans were confined over night in this dungeon. In the morning but twenty-three were taken out alive.

The physical conditions endured by these victims of close air must have included: diminished oxygen tension in the air and corresponding excess of carbon dioxid; excessive heat, combined with humidity; pollution of the air with organic exhalations from the lungs and skin. The effect of this physical environment must have been aggravated by the associated psychic factors of fear and rage.

It would seem to be a very simple problem in this experimental age for a jury of laboratory workers to present a verdict declaring the exact cause of death in these victims of close air; yet the annals of research nowhere more vividly illustrate our labored progress toward truth than in the history of the attempt to establish the factors which physiologically distinguish closed from open air, and a knowledge of which must underlie any rational system of ventilation.

Numberless observations have all led to the one conclusion that prolonged confinement in close air tends to lower vitality and increase the incidence of certain infections, especially pulmonary tuberculosis. Even aside from the established fact that the transmission of infectious disease in closed rooms is dependent on the incidental concentration of the infective material and not on any deleterious property of the air itself, it will be generally admitted that there is a vital difference between closed and open air which makes for the advantage of the latter in the preservation of health and in the recovery from, at least, certain diseases.

Already, by the middle of the last century, it had been experimentally determined that the carbon dioxid of the expired breath could not be held accountable for the deleterious qualities of air under any endurable conditions of crowding indoors. It was found by Leblanc,[1] in 1842-43, that animals could be confined with impunity in an atmosphere containing as much as 30 per cent. carbon dioxid, provided the proportion of oxygen was raised to 70 per cent.

Other observers recorded similar results. In short, animals and men can tolerate without distress an increase of carbon dioxid in the air far beyond any concentration which it is likely to acquire under the worst conditions of crowding, provided the oxygen tension is maintained at a high level. It has been found, however, that animals breathing in sealed vessels, in which the proportion of oxygen falls while that of carbon dioxid rises, readily succumb. The reason for this opens an interesting chapter in physiology which has been written chiefly by Zuntz and by Haldane and his associates.

The gist of the matter is contained in the statement that the normal excitement of the respiratory nerve-

* Read before the Denver County Medical Society.

1. Billings, Mitchell and Bergey: The Composition of Expired Air and Its Effects on Animal Life, Smithsonian Institution, 1895.

center depends on the accumulation within it of carbon dioxid, a waste product which it is a prime object of respiration to remove. Wide fluctuations in the oxygen tension of the air breathed are physiologically indifferent until the proportion falls to about 13 per cent. of an atmosphere; then the body begins to suffer from lack of oxygen. The internal effect of this deprivation is a disturbance of metabolism resulting in an excessive production of acid substances, especially of lactic acid, in the body.

This acid in the circulation lowers the "threshold of irritability" of the respiratory center for carbon dioxid; so that under the conditions named, simultaneous failure of oxygen and accumulation of carbon dioxid in the respired air, we have a vicious circle established involving both a progressive increase of irritability and an increase of the irritant of the respiratory center, the outcome of which is physiologic disaster.

Under the influence of von Pettenkofer, in the early sixties, views were accepted which for many years established the requirements for good ventilation. It was conceded that, though carbon dioxid itself could not be regarded as the deleterious factor of the breath, its concentration in an inhabited apartment afforded a safe and readily determined index of the purity of the air. Hygienists now took their stand on a presumptive toxicity of exhaled air due to organic pollutions derived from the lungs. It was this insidious poison, of whose concentration in the air the carbon dioxid percentage formed an index, which it was the object of ventilation to remove.

Substantial support was given to this doctrine by the renowned experiments of Brown-Séquard and d'Arsonval in 1887.[1] These authors found that the liquid condensed from expired air when injected into animals produced toxic symptoms or even death. They confined animals in a series of cages connected together by rubber tubing through which air was aspirated. Each animal, therefore, was forced to breathe the air which had already been respired by the creatures preceding it in the series. The authors found that the last animal in the chain, which had respired in air already breathed by all the others, first succumbed to the atmospheric conditions; the next to the last died second; the first and second animals usually remained alive. When the air entering the last cage was washed by passage through concentrated sulphuric acid, the death of the animal therein was prevented. These workers considered that they had furnished crucial evidence that whatever toxicity is possessed by exhaled air is due to organic effluvia contained in it. Doubt was soon thrown on these conclusions by other observers who either failed to obtain the results of Brown-Séquard under similar experimental conditions, or explained such results as due to errors in technic.

Among the most authoriative pronouncements on the subject was that published in 1895 by Billings, Mitchell and Bergey,[1] who specifically denied that there was any evidence of a special toxicity in the expired air. "The injurious effects of such air observed," they write, "appeared to be due entirely to the diminution of oxygen, or the increase of carbonic acid, or to a combination of these two factors." They consider that the principal, though not the only, causes of discomfort to people in crowded rooms are excessive temperature and unpleasant odors. So the idea gained ground that the deleterious qualities of rebreathed air are not due to organic pollution, and as will presently be seen, many recent researches tend to support this view. Only the other day, however, Rosenau and Amoss[2] gave an account of careful experiments which inevitably suggest the position assumed by the school of Brown-Séquard. These workers condensed the vapor of human expiration and injected the liquid into guinea-pigs. No symptoms followed this procedure. But after an appropriate interval of some weeks a little of the blood-serum from the persons supplying the moisture was injected into the same animals. The outcome was unmistakable anaphylactic reaction. According to current beliefs the result showed that the expired air must have contained proteid matter which sensitized the pigs toward proteids in the blood of persons from whom the first proteid was derived. The authors offer, as yet, no opinion as to whether the proteid in the expired air possesses hygienic significance. We may assume *a priori* that when air is rebreathed, its proteid content may or may not be resorbed. In the former case it might be simply indifferent to the tissues, or it might sensitize them and prove more or less disastrous to the general resistance powers of the body, or the process of sensitization might be carried on to complete immunity. Since the respiratory channels of every person must continually contain the organic matter found in the exhaled air, it is difficult to see how the body could escape acquirement, through auto-inoculation, of any specific alterations which could be imposed on it through rebreathing the air. We find a suggestive analogy in the physiologic relations of carbon dioxid which it is one of the chief objects of respiration to remove. Added to the air to a sufficient percentage it is deadly to animals, yet so far from its being useless in the body, Haldane and Priestley[3] found that it must form 4 to 5 per cent. of the alveolar air for the maintenance of normal respiratory movement, and a considerable lowering of its tension in the body would be followed by speedy death. In fact, as will be seen later, Boycott and Haldane note that the subjective sense of invigoration and well-being excited by cold weather is associated with a high tension of carbon dioxid in the alveolar air.[4] It is, perhaps, to be regretted that the experiments of Rosenau and Amoss were made, apparently, only with air that had passed through the mouth and was therefore liable to local pollution. Formanek,[5] for example, had concluded from an extended review of the subject that all the poisonous properties that had been demonstrated in expired air could be attributed to ammonia arising from decompositions occurring in the mouth.

In recent years the hygiene of ventilation has been the subject of renewed and widespread investigation from a different point of view. It has been attempted, namely, to ascertain the physical elements underlying the subjective sense of discomfort suffered in the bad air of ill-ventilated spaces.

In 1905, Heymann, Paul and Ercklentz performed in the laboratory of Flügge several series of experiments of fundamental importance.[6] It was found that when a man was confined in an air-tight box no discomfort was felt until both temperature and humidity of the air within the box had increased to certain degrees; then were experienced with increasing intensity the various symptoms produced by foul air, as headache, fatigue,

2. Rosenau and Amoss: Organic Matter in the Expired Breath, Jour. Med. Research, 1911, xxv, 35.
3. Haldane and Priestley: The Regulation of the Lung Ventilation, Jour. Physiol., 1905, xxvii, 225.
4. Boycott and Haldane: The Effects of Low Atmospheric Pressures on Respiration, Jour. Physiol., 1908, xxxvii, 359.
5. Quoted by Benedict and Milner, Note 9.
6. Heymann, Paul, Ercklentz, Flügge: Ztschr. f. Hyg. u. Infektionskr., 1905, lix.

dizziness, nausea, etc. When the confined air was set in motion by an electric fan the disagreeable sensations were almost immediately relieved. If, while suffering from the conditions within the box, the subject breathed pure air from outside through a tube fastened in the wall of the space no relief from the symptoms was experienced. If, however, the subject was situated wholly outside the box and, through tubes inserted in his nostrils breathed air from within which had already been made foul by another person, no discomfort was felt. The percentage of carbon dioxid within the box often rose to 15 or 16 parts per 1,000, which is many times its concentration in an ordinary room.

"Under this condition of excessive carbon dioxid no discomfort was experienced by the subjects until the temperature had risen to about 78.8 F.; on the contrary, if the humidity of the air was 75 to 80 per cent., the discomfort was invariably noticed at 75.2 F. Accurate observations of the body temperature were taken at the breast with a delicate thermoelement, and measurements of the temperature and humidity of the clothing showed that as soon as the disturbance of the heat evolution of the body began, there was a maximum increase in the temperature of the skin and increase in the humidity of the covered portions of the body. These objective observations invariably accompanied the subjective disagreeable sensations."[7]

Flügge,[8] in summarizing the results of these researches, says, "Numerous investigations on people both well and sick have shown that chemical changes in the character of the air in inhabited rooms exercise no deleterious effect on the health of the dwellers."

Interesting observations in the same direction were made by Leonard Hill and his colleagues.[7] Eight men were confined in an air-tight chamber of about 3 cubic meters' capacity, having windows in the walls and three electric fans in the roof. Hill writes:

After forty-four minutes the dry bulb stood at 87 F., the wet bulb at 83 F. The carbon dioxid had risen to 5.26 per cent. The oxygen had fallen to 15.1 per cent. The discomfort felt was great, all were wet with sweat and the skin of all was flushed. The talking and laughing of the occupants had gradually become less and then ceased. On putting on the electric fans and whirling the air in the chamber the relief was immediate and very great, and this in spite of the temperature of the chamber continuing to rise. On putting off the fans the discomfort returned. The occupants cried out for the fans. No headache or after-effects have followed this type of experiment, which has been repeated five times.

Prof. Theodore Hough describes an experiment in which a person was confined in an air-tight box with dimensions 3 by 5 by 7 feet.

The percentage of carbon dioxid rose to 50 parts or more in 10,000. When the observer opened the door the odor of the air within was almost overpowering; and yet, provided the water vapor was absorbed and the temperature of the box kept down, the subject of the experiment had not only been unconscious of this odor but had actually suffered no discomfort.[8]

In their classic experiments on the conservation of energy in the human body with the respiration calorimeter, F. G. Benedict and R. D. Milner[9] kept a subject for twenty-four hours in a chamber, the air of which held an average carbon dioxid content of 220 parts per 10,000, or over seventy times the normal, together with a reduction of oxygen to less than 19 per cent. The humidity was kept down and the temperature held uniform. The subject of the experiment suffered no discomfort and his body metabolism, as determined by the number of calories of heat given off, the weight of oxygen consumed and of carbon dioxid exhaled, did not differ from that of a control experiment made in pure air.

In their experiments on the variations of carbon dioxid tension in the alveolar air, Boycott and Haldane express the opinion that "the alveolar carbon dioxid tends to a lower level in warm weather." They say:

The authors are of the opinion from general experience, which it is not possible to express in numerical terms, that this diminution in the alveolar carbon dioxid is associated with the feeling of warmth of a rather unpleasant kind rather than with any absolute point on the thermometer. It is clear that it has nothing to do with body temperature as measured in the rectum, and is produced by contact of warm air with the face and hands within two or three minutes. We think, indeed, that it is one of the physical expressions of the feeling of warmth and slackness, while the rise in the carbon dioxid tension is associated with the general exhilaration and stimulation produced by cold air.

The foregoing résumé presents the essential demonstrations of our knowledge of the physiology of ventilation. The facts seem to me to point to a tangible, measurable, physical basis for the known hygienic and therapeutic virtues of the open air. The definite conception of the prophylactic and remedial powers of fresh air which has gradually developed in recent times, chiefly through the clinical study of pulmonary tuberculosis, marks perhaps the most valuable discovery ever achieved in medicine.[10] There is nothing in the evidence before us which proves that the chemical changes in respired air, whether lack of oxygen, increase of carbon dioxid or the accumulation of organic effluvia are injurious to the organism under any tolerable conditions of bad ventilation. But it would be most injudicious to conclude from this negative evidence that these chemical changes of respired air do not render it noxious to living beings. The curious fact is mentioned by Benedict that green plants which are able, under the sunlight, to appropriate and decompose the carbon dioxid of the free air, of which it only forms three parts in 10,000, do not thrive when the carbon dioxid tension is increased. On the contrary, plants thus exposed to even a slight excess of carbon dioxid showed deterioration in growth and reproduction, "and it is believed that the comparatively sudden increase of the carbon dioxid in the air to an extent of but two or three times the present amount would result in the speedy destruction of all plant life." While a positive assumption that rebreathed air is chemically deleterious would be quite gratuitous, the contrary point of view is equally unfounded. We must simply admit that the exhaled air has not been proved poisonous. On the other hand, when we consider the feelings, the subjective state, of a person confined in close air our evidence is of the most positive kind that the sensations and symptoms of discomfort have no relation to the chemical changes in the close air, but depend wholly on elevation of temperature combined with excessive humidity. These physical factors operate on the body by interfering with the loss of heat from the skin. The temperature regulation of the body, that delicate equilibrium which depends on the exact coordination of so many physiologic factors, is overturned.

7. Hill, Leonard: The Relative Influence of Heat and Chemical Impurity of Close Air, Jour. Physiol., 1910, xli, p. 3.

8. Hough, Theodore: The Physiologic Aspects of Ventilation, Am. Jour. Pub. Hyg., 1910, xx, 262.

9. Benedict, F. G., and Milner, R. D.: Experiments on the Metabolism of Matter and Energy in the Human Body, Bull. 175, U. S. Office Exper. Sta., 1907.

10. James, W. B.: Environment in Therapeutics from the Standpoint of Physiology, Am. Jour. Med. Sc., 1906, p. 665.

It is obvious that mechanical disaster to the vital machinery would ultimately result from accentuation of the conditions interfering with the physiology of heat regulation and concomitant reactions. Nature, however, has provided a fender against this evil.

As the sense of pain is, on the whole, the great though immaterial protector of the body against injury, so the distress, the feeling of ill-being suffered by one confined in close air is the psychic forerunner of physiologic incoordination. In moist, heated air the skin becomes congested; radiation, the principal means for the loss of heat to the body, diminishes with rising external temperature. Now an associated reflex, the secretion of sweat, becomes of increasing importance. By the evaporation of water thus accumulated on the skin the loss of heat may reach almost any rate and amount. But evaporation is effectually repressed by the saturation of the layer of air next the skin and can be resumed only when motion is imparted to the gas, replacing the humid coat with a dryer covering. It is therefore clear why a breeze should be so immediately beneficent to the sweltering body.

A physiologic analysis of the skin makes it well-nigh certain that all these vascular and secretory changes are but reflexes dependent on the irritation of peripheral afferent nerves, the nerves which are specifically relegated to the *temperature* sense. The feeling of warmth and coolness normally depends on their excitement: they are the sole messengers through which the master mechanisms of the body are put in touch with its thermal environment and when, perchance, the normal effort at readjustment fails, the body temperature rises or falls with the warning psychic accompaniments of discomfort or pain. No limit can be set to the authority exercised by the temperature nerves of the skin over the metabolisms of the body. In the tropics they open in man his channels for the loss of heat, while in the polar regions they excite the appetite, stimulate digestion and render possible the appropriation of indispensable potential energy in the food. Even in the hungering animal they reflexly fan the combustions in the muscular tissues with the wonderful result that the body temperature remains practically constant in a thermal environment ranging through many degrees. When the reflexes are abolished under a general anesthetic the body of a man behaves like that of a cold-blooded animal: its temperature rises and falls with that of the exterior.[11] It cannot be urged too insistently that definite chemical and physical changes are wrought in the vital tissues under the influence of nervous impulses. The phenomena of muscular contraction and of salivary secretion have long been fields for laboratory demonstration. Recently, Howell[12] has shown that potash ions are set free in the heart through stimulation of its inhibitory nerve. Crile[13] has elaborated a chain of evidence that afferent fibers exercise no less organic effects on their nerve centers than do efferent nerves on peripheral tissues.

There is, then, no theoretical difficulty in the way of believing that the temperature nerves of the skin are specific organs, though not the only ones, for the regulation of the metabolisms of the body; as a corollary to this thesis we can hardly doubt that through them, largely, are developed and maintained the innate "resistance powers" of the body and its ability to respond protectively to the assaults of poisonous antigens. The clinical physiologist must feel no less sure that the "warm" and "cold" nerves of the skin have independent specific relations to the vital chemistry. For the present we must leave out of consideration the metabolic significance of the pressure nerves of the skin and the related sensory nerves of the muscles. Many facts, however, point to the conclusion that the cooling, moving air of the open operates on them as a stimulus of high importance. In fine, the open air furnishes an environment most favorable for that infinitely complex play of nervous impulses involved in the balance of vital forces. The ceaseless adjustment of the organism to the fluctuation of the physical factors of climate gives the internal exercise needed for the maintenance of health. Every breath of air, every degree of temperature and humidity alters, as it were, the physiologic center of gravity of the body and is answered by a vital response directed toward maintaining the equilibrium of the system, an equilibrium which we crudely recognize through the reading of the clinical thermometer. But the open air embraces other attributes which render futile the imitation of its conditions indoors.

The beauty of Nature appeals to an esthetic sense which cannot be neglected in any scheme of physiologic development. The feeling which distinguishes a natural from an artificial flower, which expands best under the ceiling of the sky, which puts one in harmony with living things has a power for good in itself.

CONCLUSIONS

1. No proof has been furnished that the increase of carbon dioxid, the decrease of oxygen or addition of organic animal matter in the air of ill-ventilated apartments is, under any ordinary circumstances, injurious to health.

2. It has been proved that such chemical changes are not the cause of the sensations and symptoms due to poor ventilation.

3. The subjective and objective effects of close air are the result of the combined elevations of temperature and humidity incident to the association of living bodies.

4. It is argued that the temperature nerves of the skin are specific sense organs for the appreciation of the variations of temperature and humidity and through which a wide range of metabolic actions in the body is regulated. It is through the genius of the moving air of the open that the temperature nerves find their most salutary stimulus and induce metabolisms characteristic of highest machine efficiency in the body. The physiologic difference between "open" and "closed" air depends partly or wholly on differences in the stimulation of the temperature nerves of the skin under the two conditions.

5. The environment of the open air is conducive to an esthetic state that should not be ignored as an aid to healthy living.

1360 Vine Street.

11. Pembrey, M. S.: Animal Heat, Schäfer's Textbook of Physiology, 1898, i, 866.
12. Howell, W. H., and Duke, W. W.: The Effect of Vagus Inhibition on the Output of Potassium from the Heart, Am. Jour. Physiol., 1908, xxi, 51.
13. Crile, G. W.: Phylogenetic Association in Relation to Certain Medical Problems, Boston Med. and Surg. Jour., 1910, clxiii, 893.

Inheritance.—Inheritance is said to be blended when the characteristics of the two parents are evenly blended in the offspring, as in the case of the mulatto. It is said to be particulate when the characteristics of one parent are expressed in one part of the body and the characteristics of the other parent in another part of the body of the offspring, as in the case of piebald animals. Again, the inheritance is said to be exclusive when the offspring resembles one parent only. In such cases the parent who is resembled is said to be prepotent.—**A. H. Stewart in *Dietetic and Hygienic Gazette*.**

ANAPHYLAXIS

ST. GEORGE T. GRINNAN, M.D.
RICHMOND, VA.

Immunity is now one of the most important phases of modern medicine. In order to understand the process of immunity or antianaphylaxis we must understand anaphylaxis, a condition which precedes immunity. Prophylaxis depends on anaphylaxis. Recent work has done much to advance our knowledge of anaphylaxis, although there remains much to be made clear. The name "anaphylaxis" was given by Richet in 1904, and was used to define the condition of acquired or congenital hypersusceptibility of an organism to a strange protein, or antigen with a reaction body formed in the body of the organism undergoing immunity.[1] The substance must be protein in nature, though not all of them will cause anaphylaxis (e. g., leucin and tyrocin).

For example, if we give a normal guinea-pig a sensitizing dose of 0.1 c.c. of horse-serum subcutaneously, intravenously, or intracranially, and after a period of from seven to nine days give this sensitized guinea-pig another dose in the same manner, the pig becomes very suddenly sick. He becomes restless, scratches at his nose and mouth and appears in great distress. His breathing becomes irregular, shallow and quick. He has convulsions and dies in so-called anaphylactic shock, the heart continuing to beat for some time after respirations have ceased. Had the pig survived the second dose, he would have been in a condition of immunity for the time being, and would have no longer reacted to a dose of the same serum. If after giving the first dose no more serum had been given, no symptoms would have resulted.

The period of incubation is the time that must elapse before the second or intoxicating dose will produce the characteristic symptoms. This period is from one to three weeks, after which the animal is sensitized or hypersensitive. The average time of incubation is ten days.

Rosenau and Anderson used doses varying from 0.000001 c.c. to 8 c.c. and did not find the period of incubation appreciably prolonged by a large sensitizing dose.[2] When the interval between the sensitizing dose and the second dose is three, four or five days there are no symptoms.

So effective is the process of this biologic phenomenon that if the horse-serum be dropped into the eye of the guinea-pig, it may be sensitized to a second dose in seventeen days. The experiments that have been made show that the toxic action is specific so far as the various serums are concerned. A guinea-pig sensitized with horse-serum is more susceptible to horse-serum than to cattle-, sheep-, hog- or other serum. Anaphylaxis is therefore regarded as a specific reaction.

Many different proteins have been used, including horse-serum, egg-, donkey-, sheep-, rabbit-, eel-serum and others. The serum first used by Richet was obtained from the tentacles of a sea anemone (actinia).

In the experiments made by Rosenau and Anderson there was a reaction in each case for the various proteins on giving the second dose.

The specific nature of anaphylaxis is further shown by various experiments. For example, guinea-pigs sensitized with three separate proteins, viz., horse-serum, egg-white and cow's milk contain three separate anaphylactins in their blood.[3]

The toxic principles in the proteins resist the various physical and chemical forces that destroy. They are filterable through porcelain[4] and are not destroyed by drying. Heating for two hours at a temperature of 130 C. does not destroy them. The poisonous action is not destroyed by chloroform, formaldehyd, trikresol (0.4 per cent.), alcohol or permanganate of potassium. Extracts of dried mummy and eighty-year old cow's placenta and blood dried for fourteen years, the cells being destroyed, were capable of sensitizing and producing anaphylaxis.

Extract of peas is quite as active as horse-serum. Guinea-pigs fed with horse-serum or horse-meat are susceptible to subsequent injections of horse-serum, and guinea-pigs fed with beef are susceptible to cattle-serum.

The poisonous principle in horse-serum appears to act on the respiratory system, or centers, the heart continuing to beat after respiration ceases. The poisonous action has no relation to hemolysis, but the blood contains an acute poison entirely independent of any hemolytic action.

It was first thought that in the case of diphtheria antitoxin, the antitoxin was the cause of the poisonous action, but it is now known that diphtheria antitoxin is entirely harmless and that the horse-serum is the sole cause of the poisonous action.

Man reacts to the first injection of horse-serum in seven to fourteen days, while a guinea-pig shows no reaction to the first injection. Both man and the guinea-pig react to the second injection, the reaction differing in the severity and kind.

Of thirty-four deaths reported by Owens,[5] following the injection of horse-serum (in the form of antitoxin), the majority were persons subject to asthma, or inherited a susceptibility to the odor of horses, or discomfort when in the neighborhood of a horse.[6]

The following case is interesting as bearing on this point. A young man, aged 25, was a subject of hay-fever and occasional attacks of asthma. His brother is an asthmatic. So susceptible was the patient to the odor of horses that he was compelled to ride in a closed carriage or be made sick by the odor of the horses. Some children in his home contracted diphtheria. As a means of protection the young man was given antitoxin. In a few seconds he was in collapse and became unconscious and his respiration so embarrassed that it was thought that he was dead. After hard work, restoratives and artificial respiration saved his life.

According to Donaldson,[7] 80 per cent. of all serious accidents in the use of serum occur in those who have been previously inoculated. Reports from all parts of the country confirm this. I gave a child, 3 years old, an immunizing dose of antitoxin. There was little reaction. Eight months later the child developed nasal diphtheria. Antitoxin was given and the child became very ill. The respiration became rapid and labored so that pneumonia was suspected. A large area of the back surrounding the point of injection became very edematous and very dark. The child's condition seemed very grave. After three days of severe illness the symptoms began to subside and all symptoms of anaphylaxis rapidly disappeared.

Another case of interest presented some features that are unusual. A lady wishing to nurse her daughter took an immunizing dose of diphtheria antitoxin. She was taken suddenly ill and became very much swollen

1. Pediatrics, September, 1911.
2. Hyg. Lab. Bull., No. 45.
3. Hyg. Lab. Bull., No. 45, p. 60.
4. Hyg. Lab. Bull., No. 29, p. 92.
5. Northwest Med., July, 1911.
6. Hyg. Lab. Bull., No. 50, p. 8.
7. Med. Rec., Aug. 5, 1911.

all over her body. An urticarial rash developed. Her joints became stiff and she was quite ill for one month. The stiffness in her joints remained for one year, after which time she entirely recovered.

The fact that the serum which carries antitoxin at times produces a severe reaction should certainly not prevent the use of antitoxin in diphtheria, as out of the enormous number of cases in which antitoxin has been used the mortality from the serum has been exceedingly small.

In the case of asthmatics for whom the serum conveying antitoxin is so poisonous and in the case of those who have taken the serum before, some test of their susceptibility is of great value. Dr. August Callé has used and recommends a scratch test.[8] The test is made in the same way as the von Pirquet test for tuberculosis. If a minute quantity of the serum be rubbed into a scratch in the skin and there follows a severe local or systemic reaction, its further introduction into the system in full therapeutic doses would be contra-indicated.

In cases in which there is danger from the use of horse-serum, atropin[9] has been used by a number of investigators to modify the shock. Chloral hydrate,[10] epinephrin and artificial respiration have given good results in a few cases, and has been useless in a large number of cases.

Rosenau and Anderson have pointed out the great similarity between anaphylaxis and the process that takes place in tuberculosis. The tuberculin reaction is one of the best-known instances of anaphylaxis.

The hypersusceptibility of the tissue surrounding a tuberculous area assists in encapsulating and limiting the process.[11] We see, therefore, that "resistance to disease may be largely gained through a process of hypersusceptibility, and that hypersusceptibility has an important bearing on the prevention and cure of certain infectious diseases or processes."

Should tubercle bacilli be lodged on tissue in a state of anaphylaxis then the protecting agencies of the organism are quickly concentrated where they are most needed.

It may be noted in this connection that the immunity caused by vaccinia is due to the power of rapid reaction in the organism.

The mother guinea-pig transmits the susceptibility to the toxic action of horse-serum to her young. This may throw some light on the hereditary transmission of tuberculosis. The fact that tuberculosis does run in families must, without doubt, be due to hypersusceptibility in a great number of cases.

The person who is hypersensitive to tuberculosis may, by the proper use of tuberculin, acquire immunity. By the wrong use of tuberculin in too large, or too oft repeated doses, the beneficial hypersensitive state of the tissue may be exhausted or destroyed. Beginning the use of tuberculin, it should be given in such small doses as to develop and not diminish the power of anaphylaxis.

The early failure in the use of tuberculin was due to too large dosage and overwhelming an already poisoned system. The small dose of tuberculin revolutionized the use of tuberculin. We must agree with Voltaire when he says, "the most mischievous ignorance is that of the critic." The critic in this case was ignorant and Koch builded better than he knew. Like Harvey, he lived ahead of his time. Diseases like hay-fever and dermatitis, such as those produced by poison-oak, find their explanation in hypersusceptibility.

Hypersusceptibility may be easily induced in guinea-pigs with protein extract obtained from bacterial cells. The first injection is quite harmless, but the second injection of the same extract, after a definite lapse of time, is followed by profound physiologic changes, and resembles the condition when horse-serum is injected. In certain cases the second injection is followed by immunity to corresponding infection.

"Rosenau and Anderson believe that the phenomenon of hypersusceptibility has a practical significance in the prevention and cure of certain infectious processes. It gives a possible explanation to the period of incubation of some of the communicable diseases.

"It is coincident that the period of incubation of a number of infectious diseases is about fourteen days, which corresponds significantly with the time required to sensitize animals with a strange proteid. In certain infectious diseases with short periods of incubation, such as pneumonia, the crisis which commonly appears about the tenth day may find a somewhat similar explanation.[12]

The old expression, "one man's food is another man's poison," finds its explanation in anaphylaxis.

While I was an intern in a hospital in New York City, there was a man in the ward who would not have any form of mutton on his tray. He insisted that any form of mutton made him sick. It was decided to try him with a pill made of mutton disguised, given with his medicine. He was given the disguised mutton pill and he promptly became very sick, and declared he had taken sheep meat in some form.

Dr. Harold N. Cole[13] records a case of a man, aged 47, who first at the age of 9 had a severe urticaria, vomiting and general depression after eating buckwheat cake. After that time he was always very susceptible to buckwheat, and by means of his reaction was able to detect the adulteration of pepper with buckwheat. The patient was vaccinated with buckwheat flour, using wheat flour for control. Within fifteen minutes he had a very general depression, areas of edema and a large wheal at the site of the vaccination.

The connection between the toxemia of pregnancy and anaphylaxis is by some experimenters regarded as an established fact. Dr. Goodall of McGill University has reported three cases of sudden death in children after a copious nursing from an eclamptic mother. The manner and system of death were identical in all three cases. There was general depression, passing into coma and respiratory paralysis. The heart continued to beat after respirations ceased.[14]

In a recent article on "Anaphylaxis in its Relation to Pediatric Practice," Drs. Pisek and Pease[15] discuss the question of milk and the intolerance of milk by certain children and the resulting anaphylactic shock on taking milk. They say:

This may give ready explanation of the failure of many atrophic children to take milk, no matter what the modification. It being impossible to sensitize an animal with its own proteins, a quick recovery would be expected if these children were placed on human milk, which in fact is usually the only method by which they can be saved.

Many children do well on cow's milk for a week or ten days, the period of incubation of serum sickness, and after that time begin to have trouble.

8. Pediatrics, September, 1911.
9. Cleveland Med. Jour., May, 1911.
10. Hyg. Lab. Bull., No. 64, p. 8.
11. Arch. Int. Med., 1909, iii, p. 560.
12. Hyg. Lab. Bull., No. 36.
13. Cleveland Med. Jour., May, 1911, p. 447.
14. Pediatrics, September, 1911.
15. Pediatrics, September, 1911.

The toxic action of Jersey cow's milk on young infants is well known and probably finds its explanation in anaphylaxis.

Egg albumin, which is so often used when milk cannot be used, at times causes such severe anaphylactic reaction that discontinuing the egg albumin is necessary to relieve the condition.

It is necessary to understand clearly the difference between antiserums and vaccines in order to use these products. Antiserums, which contain antibacterial power, are elaborated in the blood of a horse. Vaccines are suspensions of dead bacteria in physiologic salt solution. The antiserum is a biologic germicide, and when injected into a patient conveys the protective substance produced by the horse. When the vaccine is injected the patient must by means of the vaccine produce his own protective bodies. It is clearly seen then that when a patient is overwhelmed with infection a vaccine will only do harm. Experience has shown this to be true.

In a general septicemia the serum is to be preferred, whereas in a localized or semilocalized condition the vaccines are better. Too large a dosage and at wrong intervals has been responsible for much of the failure with vaccines.

Furunculosis can be increased by a very large dose of streptococci. While the activity of the infecting agent is producing a negative phase the use of vaccine is clearly not indicated.

It is clear from what we have seen that in anaphylaxis we are studying a most important step in the process of prophylaxis and immunity. We are studying the use of vaccines and antiserums which are so rapidly forming such an important part of our work and which require as much study as the most dangerous drugs.

In addition to the references given in the footnotes the following may be of value:

Hyg. Lab. Bull., No. 38.
Jour. Med. Soc. New Jersey, June, 1911.
Med. Council, July, 1911.
Med. Rec., April 22, 1911.
Med. Rec., June 10, 1911.
Med. Rec., May 6, 1911.
Australasian Med. Gaz., Nov. 21, 1910.
The Journal A. M. A., Sept. 23, 1911, p. 1023.
Johns Hopkins Hosp. Bull., July, 1911.

201 West Grace Street.

THE SIGNIFICANCE AND TREATMENT OF VOMITING IN INFANTS AND CHILDREN

H. LOWENBURG, A.M., M.D.

Pediatrist to the Lebanon Hospital, Jewish Hospital, Jewish Maternity Hospital, Philadelphia, and to the Jewish Seaside Home, Ventnor, N. J.

PHILADELPHIA

In presenting my views on the significance and treatment of vomiting in infancy and childhood, I do not wish to be understood as regarding this condition as a distinct disease entity. On the contrary, my main purpose shall be to emphasize its importance as a symptom. It becomes necessary to study in detail the etiologic factors concerned, so that an intelligent therapy may be arranged. It follows, therefore, too, that each case must be individually considered. The causes of vomiting differ somewhat in infancy, i. e., under 2 years, from those occurring in early childhood (after 2 years), hence a more or less elastic subdivision may be formed as follows: 1. Vomiting of infancy. 2. Vomiting of early childhood.

VOMITING OF INFANCY

In the early days of life, up to the age of 6 months, the stomach is almost entirely covered by the large left lobe of the liver, which cannot, when the stomach is filled, help but interfere with the rapid emptying of its contents through the pylorus, and by pressure causes the organ to assume a more vertical position than when empty. This, together with the undeveloped valve action of the cardiac end, permits and explains the easy regurgitation of food at this time of life. This type of vomiting, better called regurgitation, occurring immediately after feeding, might be regarded almost as physiologic, or simply as the overflowing of an overfilled reservoir, were it not for the fact that if left to continue it decidedly interferes with the nutrition of the infant. It becomes less frequent after six months, as there is, after this period, a decided increase in the greater curvature and the cardia, together with the development of the valve-like action at the cardiac orifice. Nor does the liver cover the entire organ. The prevention and cure of this variety of vomiting can be readily accomplished by the forming of regular habits permitting of a correct feeding interval and the giving of the proper amount of food at each feeding, and by seeing to it that the infant is not picked up immediately after its meal and that it is laid on its right side so that the rapid emptying of the stomach may be favored.

The pernicious habits of irregular feeding and of overfeeding are responsible for the vast majority of cases of functional vomiting occurring under 1 year both in the breast-fed and in the bottle-fed. In making this statement my own personal experience forces me to take issue with certain German authorities who advocate the giving of as much food to the infant as it wants and as often as it wants it. Physicians are led into this error by regarding crying as a sure sign of hunger. They forget that the baby may be thirsty or otherwise uncomfortable. The giving of food on account of its warmth or pleasant taste may momentarily relieve colic or distract the infant's attention and thereby quiet it. The pain returns with increased vigor and is again assuaged in a similar manner. Simple regurgitation of food now becomes a condition of true vomiting, dependent on fermentation and dilatation, if not on actual gastritis. The best argument that an infant should not be permitted to nurse until it voluntarily stops, is furnished by anatomic and physiologic facts. The capacity of an infant's stomach at birth is approximately an ounce, and according to the figures offered by Cotton this develops as follows:

End of first	month	2½ oz.
End of second	month	3½ oz.
End of third	month	4½ oz.
End of fourth	month	5 oz.
End of fifth	month	5½ oz.
End of twelfth	month	8½ oz.

My own experience, based on actual weighing experiments with quite a large number of breast-fed babies before and immediately after feeding, as to the stomach's ability to hold the amounts at the various ages indicated, would place the figures even somewhat lower. Taking these figures as a guide, however, one cannot help but see how foolish it is, not to say dangerous, to offer to an infant under 1 month of age from 4 to 5 ounces of food at a nursing, as I frequently see done by men of large patronage and experience. This practice is pernicious, and, when once it induces vomiting, the condition is most difficult to control, even after the quantity is

reduced. The reasons for this have been mentioned, namely, dilatation and atony, if not true gastritis. A safe rule, perhaps, would be to regulate the quantity fed in such a manner that it represents in ounces the child's age in months up to about 6 months. After this the rate of progression should be slower so that at 1 year the infant does not receive more than 9 ounces at a feeding.

What is true of the quantity fed as a cause for vomiting, is likewise true of the interval of feeding. No new food must be put into the stomach until the organ has emptied itself, regained its tone and rested. Too frequent feeding is as pernicious as too much food at a feeding, amounts to the same thing, and is productive of the same ill effects. It retards gastric digestion, impedes gastric motility and hence produces fermentation, colic, vomiting and other symptoms on which depend, in turn, the early evidences of malnutrition and marasmus. It is a notorious fact, readily confirmed by any one who has had a large experience in the management of simple marasmus, that the vast majority of these infants present a history in which overfeeding or too frequent feeding, or both, are the determining factors. While it is important what an infant gets, it is just as important how it gets it and when it gets it. The caprices of its appetite or the whims of its caretaker are poor judges of what is necessary for its nutritional demands.

The prevention and cure of this type of vomiting is self-evident, viz., the proper regulation of the food as to the quantity and interval of feeding. The first has already been discussed. As to the second, no fixed rule will apply to each infant. The individual must be studied to learn his peculiarities, but when once the interval has been determined it must be adhered to strictly. A few general rules may be suggested, bearing in mind that the time between feedings becomes longer as the infant grows older. Thus up to 3 months most infants do well on a two-hour interval, counting from the time of commencing the feeding. After 3 months the time should be increased to two and one-half hours, lengthening this to three hours as 6 months is reached. Between 6 and 9 months nourishment should be given every three to three and one-half hours, and after 9 months every four hours. Regularity is important, and the infant should be awakened during the day for its food on the hour prescribed. During the night, during the first few weeks or in very weak infants, there may be two feedings. After the first month this should be reduced to one feeding and after the second month night feedings should be entirely omitted, the infant sleeping from 10 p. m. until 6 a. m. With a little courage and patience on the part of the parents these habits of regularity are as readily acquired as vicious ones, and the only effect on the infant is incalculable good. Where possible the infant should occupy a room by itself, and if expense is no consideration, I not infrequently employ the services of a trained nurse to do for the infant what the mother is too nervous to do herself. If the infant is not to vomit after feeding it is not to be picked up or shaken, but after its meal it must be permitted to lie undisturbed, preferably on its right side. The time spent at the breast should vary from ten to thirty minutes, depending on the age of the infant and the interval of feeding, but under no circumstance should the meal be interrupted to be resumed again later. These rules apply to the bottle-fed as well as to the breast-fed baby.

The causes of vomiting thus far detailed apply to both classes of infants. There are, however, certain conditions, which, while applicable to all infants, apply with more emphasis to the breast-fed or the bottle-fed as the case may be. Thus we have the importance of the composition of the food applying with greater force to the bottle baby although its significance cannot be ignored entirely when dealing with breast-fed children. The ingredients of the food most commonly at fault are the fat and sugar, and to those accustomed to dealing with these cases the clinical symptoms are significant and frequently permit of a correct interpretation. The vomitus due to excessive fat is distinctly sour and acid, smelling like rancid butter. It contains lumps of coagulated calcium casein, holding within its meshes the fermenting fat which is soluble in ether and reacts characteristically with osmic acid. These pieces of curd are large or small and have a yellowish appearance. The time of vomiting in this condition is important, occurring from one hour to one and one-half hours after feeding; i. e., after fermentation has occurred. The vomiting due to excessive feeding or to too frequent feeding, on the other hand, occurs immediately after a meal, the vomited matter being as a rule, in the beginning, unchanged and frequently uncoagulated. With fat vomiting there are characteristic bowel symptoms, as well, which will not be discussed here.

The remedy, if in the breast-fed, is to attempt the reduction of the fat percentage by modifying the mother's milk. This is, as a rule, more readily accomplished than to increase the percentage where the fat is too low. The free drinking of water by the mother, the partial or complete exclusion of milk, soup, malt liquors and meat from the dietary, increase in exercise and the occasional use of a laxative are measures well calculated to accomplish the result desired. While this is being accomplished the infant should receive a purge of iced castor oil. Stomach washing, done once or twice, is occasionally needed. This applies with greater force to the bottle-fed. Each nursing should be preceded by an ounce or two of some cereal water, preferably made from barley or wheat. Occasionally these cases progress more rapidly if the meal is followed by a grain or two of extract of pancreatin used simply as a temporary means until the fat-reduction is accomplished. In rare instances where it is impossible to reduce the fat the breast-milk may be withdrawn and diluted with a cereal water and fed from a bottle, or the first milk may be expressed or pumped from the breast and the infant allowed to suck "middle" milk or "last" milk, so-called. Very rarely the breast-milk may be withdrawn and pancreatized. Any of these maneuvers, alone or in combination, will usually suffice to overcome the condition in breast-fed babies.

In bottle babies, as a rule, the problem is simpler. Here, following the initial purge and stomach-washing, the infant is fed for twenty-four hours on some cereal water. The physician may then, by one of the many methods of milk modification, so adjust the fat percentage as to suit the infant's digestive capacity. This failing, resort may be had to pancreatization or whey feeding temporarily, whey containing but 1 per cent. of fat.

Where vomiting continues and all fat appears not to be tolerated, we may employ with success modifications of skim-milk, buttermilk or condensed milk. Sodium citrate added to the formula in the strength of 1 to 2 grains for every ounce of milk and cream in the mixture has, in my experience, been of considerable aid in overcoming vomiting.

Sugar is rarely a cause of vomiting, but may be. It practically never is in the breast-fed. When a source of trouble it is not uncommonly associated with a watery diarrhea. The vomitus is watery, sour and hot and occurs late after feeding and may cause crying as the regurgitated material may produce a burning pain in the esophagus. The remedy is an initial purge, rarely a stomach-washing, a colonic flushing and a reduction in the amount of sugar. The protein rarely causes vomiting, unless given in excessively large amounts, in which instance the resulting curd acts as a foreign body and is expelled.

As a cause for vomiting congenital pyloric obstruction is too rarely recognized. I have elsewhere called attention to this fact, but wish here to subscribe to this statement as my guide with the hope that others will adopt it as a means for diagnosis and for saving the lives of many infants whose condition becomes hopeless before it is recognized and whose deaths are largely ascribed to other causes. It is that all cases of vomiting beginning at birth or shortly thereafter and continuing in spite of a reasonable amount of food manipulation, especially in breast-fed infants, or in artificially fed ones as well, and associated with evidences of malnutrition, are to be regarded as cases of pyloric obstruction, until it can be proved that they are not. Vomiting, propulsive in character, occurring immediately after but more often from one-half to two hours after the taking of food or drink, sour and fermented as a rule, accompanied by visible peristaltic waves in the epigastric region, not necessarily reversed, with evidences of gastric dilatation and intestinal collapse, with partial or complete constipation, with or without a palpable pyloric tumor and a varying degree of emaciation depending on the duration of the case, is usually indicative of complete or incomplete pyloric obstruction, and calls for treatment other than the usual medicinal and dietetic remedies. If complete obstruction can be proved, and it often can, surgery, usually a posterior gastro-enterostomy, offers the only hope. If incomplete obstruction or pylorospasm be the cause, as evidenced by partial constipation and stationary weight, lavage, gavage, rectal feeding and the bromids may accomplish a cure.

In direct opposition to this fatal type of persistent vomiting should be mentioned a type of persistent vomiting or "spitting up" of an entirely benign nature. This occurs in either perfectly healthy breast-fed or bottle-fed babies who persistently continue to thrive and to gain in weight. An adequate explanation for its occurrence is difficult or almost impossible of determination and no treatment seems to be of avail. Dietetic manipulations usually give no help and as a rule do harm by interfering with the infant's nutrition, making the weight stationary or causing a loss. It continues until it is spontaneously arrested. The breast-fed milk by repeated analysis is found perfectly normal. While a cause for it undoubtedly exists, the most plausible explanation is a vicious habit which, perhaps, has its origin in faulty hygiene. The condition may be only cautiously diagnosed and a good prognosis given when all other probable causes have been entirely excluded.

Vomiting is a symptom of infectious or summer diarrhea, almost entirely confined to the bottle-fed. It is impossible to enter into a discussion of this disease, but I wish merely to refer to the symptomatic and prognostic importance of vomiting. Occurring at the very onset it results from the direct irritation of the gastric mucosa and is benign in character in that the system is saved from the absorption of a large amount of putrefying material as it passes through the intestine.

Occurring continuously throughout an attack, or manifesting itself as a late feature, it is ominous, resulting as a rule from toxemia and in the majority of instances foreshadows a fatal outcome. The treatment is unsatisfactory. Lavage, to be of value, must give speedy results and must not be continued too long or too frequently repeated. A valuable procedure is gavage. Not infrequently when the smallest quantities of food are expelled when fed by spoon or bottle, they will be retained if given by the stomach-tube. Care and skill, however, must be exercised in feeding by this method. An ordinary soft rubber catheter, 28 to 30 French, is attached to a small glass funnel. All air must be expelled from the apparatus by filling it with the liquid nourishment and then pinching the tube with the thumb and index-finger. The tube thus filled is rapidly passed into the stomach while the infant rests on its back. The pressure on the tube is alternately released and renewed many times and in this way a small measured quantity of nourishment is placed within the stomach. When the infant ceases to gag the tube is pinched again and rapidly removed with one swift stroke. The gavage should follow the lavage, using the same apparatus.

Not infrequently all food by mouth must be suspended and the infant sustained by small nutrient enemas following colonic lavage. If foods are given by the mouth they must be of the mildest kind and in small bulk, concentrated but non-irritating. Cereal waters or cereal gruels, egg water, condensed milk diluted eight to fourteen times with a cereal gruel, whey or mutton broth, are our main reliance. Thirst may be allayed by hypodermoclysis or by the Murphy treatment, which I have seen give brilliant results in desperate cases. Occasionally hot water dropped on the tongue will stop vomiting. Medicaments are of little value, perhaps the best being a small dose of bromid of strontium, from 1 to 2 grains. Vomiting is often a symptom of grave abdominal disease. As a rule it here depends on peritoneal irritation. Intussusception is the most frequent condition met in infancy, while appendicitis, peritonitis, purulent and tuberculous, occur more often in childhood. The character of the vomitus will not infrequently be the concluding point in the symptomatology of intussusception, although I have mistaken a fatal purulent peritonitis occurring in an infant 1 week old as the result of umbilical cord infection, for intussusception, on account of constipation and fecal vomiting. I have also seen a small retroperitoneal sarcoma in an infant 6 days old produce fecal vomiting and bloody stools. Vomiting under these circumstances has no special treatment, its main importance being diagnostic and its outcome depending entirely on the proper surgical treatment of the case.

VOMITING IN OLDER CHILDREN

The more common causes for vomiting in older children are the acute infectious diseases, pneumonia, dietary indiscretions, with or without acute gastritis, ingestion of poisons and ptomain poisoning, acute abdominal disease, uremia, brain disease, acidosis (cyclic vomiting, so-called), reflex causes and ocular conditions. Vomiting is an important initial symptom of scarlatina, small-pox, meningitis and less so of measles, and it may replace the chill of pneumonia. The

direct origin of vomiting in these conditions, with the exception, perhaps, of meningitis, is toxic. Vomiting is a prominent symptom of pertussis and its cause here is purely mechanical. In this connection when occurring in very young infants it may be responsible for grave nutritional disorders. Therefore feeding should immediately follow a paroxysm and not precede it.

By far the vast majority of cases of vomiting in young children are due to dietary indiscretion. Included within this term are those cases, due to chemical or food (ptomains) poisons, or medicines ingested by accident or otherwise. These cases may or may not have the added element of gastritis as a causative factor. The treatment of this class of cases may be embraced within a general plan. The greatest element is prevention. It is a grave mistake not to supervise the food of a young child up to at least 4 or 5 years, and even after this vigilance should not be relaxed. Up to the age of 1 year, when possible, the infant should receive very little besides milk and that preferably maternal. A certain amount of latitude can perhaps be permitted in this direction, depending on the individual. I realize that most of my readers are in the habit of permitting a certain variety of dried bread called zwieback at a very early age. I have never seen any harm therefrom, but in the majority of American children I feel that an exclusive milk diet is best, at least up to 9 or 10 months, or until the infant has cut several teeth. Then cereals, preferably oatmeal, on account of its high protein content and its bone- and muscle-making properties, as well as for its laxative effect, and eggs, meat juices and mashed baked apples and junket, stale buttered bread and crackers, are permitted. After 18 months finely cut fresh boiled or broiled meat, chicken and fish are cautiously added once a day, baked potato moistened with butter or gravy, as well as the lighter puddings and stewed fruits as dessert. During this period and up to 2 years but four meals a day are permitted—at 7 to 7:30 a. m., 10:30 to 11 a. m., 1:30 to 2 p. m. and 6 p. m.—with absolutely nothing between. After 2 years a greater variety of well-cooked green vegetables are added and the same number of meals per diem are allowed. I maintain that a child can be trained to crave wholesome things as well as unwholesome ones; that the Biblical injunction "bring up a child in the way it shall go and when it is old it will not depart therefrom," applies to diet as well as to morals; that an adherence to the plan of diet just outlined and to absolute regularity will prevent as many, and more, cases of vomiting and indigestion as the vicious habits of continuous nibbling and overfeeding of improper foods will produce. Frequently children are brought to the physician by an anxious mother with the tale that they have no appetite. Careful inquiry will invariably elicit the history that the day is occupied by one continuous meal of small quantities of sweets and indigestibles.

The active treatment of this condition, after eliminating the cause, consists in the administration of an emetic if too much time has not elapsed since the ingestion of the substance. If the stomach has not been actively irritated or inflamed, lavage should be practiced. This is a very difficult procedure in young children and should be employed only if urgent. Following this a purgative, preferably iced castor oil or, if this is not tolerated, calomel, well triturated with sugar of milk, should, in small doses, be placed dry on the tongue. Food should be omitted for twenty-four hours, and when resumed should be of the mildest kind and given in small quantities often. Ice by mouth and a mustard paste on the epigastrium may be of service, while of medicaments, cocain, 1/30 grain, bismuth, 10 grains, and strontium bromid, 3 grains, are the best.

In acute abdominal disease, especially in appendicitis and peritonitis, as mentioned before, the interest attached to vomiting is purely diagnostic and prognostic. In peritonitis the vomitus may become fecal in rare instances, and indicates a fatal outcome. Rarely these cases are benefited by extensive lavage.

The insidious onset of nephritis and uremia is often announced by an unexpected attack of nausea and vomiting. This is especially true when occurring during the third or fourth week of an attack of scarlet fever, and such an occurrence should always lead to a urinary analysis. In this disease, therefore, vomiting becomes a symptom of much diagnostic import. Its treatment consists in the treatment of the underlying cause and is entirely eliminative, this being accomplished by a milk diet, diaphoresis, diuresis and catharsis.

Vomiting, when associated with, or rather due to brain disease, especially tumor, abscess, meningitis and rarely hydrocephalus, is also of diagnostic importance only. It is projectile in character and occurs without nausea. There is no special treatment. Of greater interest, perhaps, than all these, in that it is peculiarly a condition of childhood, is periodic or so-called cyclic vomiting. Children apparently otherwise well, but of delicate mold, the former subjects of scurvy, marasmus or rickets, perhaps without any apparent cause, certainly without any indiscretion of diet, are seized with severe attacks of vomiting. First the stomach contents are ejected and then with severe retching and exhaustion a large quantity of bile-stained material is thrown off.

There may or may not be associated fever. Jaundice does not occur, but the skin becomes muddy. Soon the attack ceases spontaneously and the child is as well as ever, and hungry, and remains so until the next attack occurs within a few weeks. Preceding the attack the child becomes languid, pale, loses interest in its play and has dark rings under its eyes. By these signs the caretaker can, if observant, foretell an attack by twenty-four hours. These children are usually anemic, have a hemoglobin percentage below 60 and are sometimes the subjects of purpura. There is usually a slight leukocytosis up to 15,000. The etiology of this interesting condition is obscure, although the researches of Edsall and others would point to an acidosis or an acidemia. Many of these cases present a highly acid urine containing large amounts of acetone. Treatment is unsatisfactory. The attack is self-limited and remedial measures are of no avail. Between attacks all effort should be directed toward building up the general strength, improving the nutrition and overcoming the acidosis. With this end in view the diet should contain starches and only a moderate amount of protein. Digestants should be given if needed, and large doses of sodium bicarbonate over a long period of time are regarded as specific by Edsall and do good in many cases as a preventive. Iron citrate given in small doses, hypodermatically, as advocated by Morse, does much good in overcoming the general weakness and anemia.

Vomiting may result from eye-strain, especially when due to high grades of mixed astigmatism or improper muscle balance. When every other cause has been excluded the eyes are to be examined by a competent oculist and proper glasses ordered.

1502 Diamond Street.

THE NEUROTIC BASIS OF JUVENILE DELINQUENCY

WITH A STUDY OF SOME SPECIAL CASES MOSTLY FROM THE SAN FRANCISCO JUVENILE COURT *

PHILIP KING BROWN, M.D.
SAN FRANCISCO

A study of a good many children who have been brought finally to serious account for misdeeds, and especially children who were referred to me from the juvenile court, has shown in almost every case a state of the nervous system in which the symptoms, although often resulting in criminal acts, were none the less expressions of a condition having its beginning long before, in the bad handling of nervous habits, a stimulation of them, or a neglect of them altogether.

It was not punishment that seemed to be needed in a single case, and it is a matter of interest that in the juvenile court alone is crime considered a symptom, as it should be, for which the doctor-judge seeks a remedy, and, if possible, a specific one. A hundred years ago the medical profession emerged from the conception of disease as heaven-sent and from the almost dark ages of a therapy of blood-letting and calomel, and we are now trying to put and keep disease and its treatment on a scientific basis. That crime results only too frequently from a disease of the mind or body, or both, no one knows better than the physician, and it seems our function to emphasize at this time the need for putting the study and treatment of all crime on the same scientific basis.

When the government is sustained by the Supreme Court of the United States in its assertion of its right to limit the working hours of women in the interests of the children they may bear, it is certain that forces have been at work on female labor for a long period, making for a deterioration of the race. It is a habit of nations to act all too quickly if honor be assailed, yet when the very life of a nation is threatened by internal conditions, a peculiar apathy generally shows itself.

The awakening to the importance of internal decay has come. The principle of paternalism in republic and monarchy alike has shown a steady extension for several decades. The recent old-age pension law in Great Britain has carried it as far in that direction as it can go, while the effort of France to increase the birth-rate, the almost universal child-labor laws, the educational requirements and government inspection of schools, penalties for the neglect or abuse of children, even to taking them from their parents, municipal nurseries for babies of working women, the special protection of pregnant working women, the prevention of marriage of persons afflicted with a disease dangerous to the consort or offspring, the limiting of the working hours of women in factories, and, finally, the placing of an eight-hour limit in this state (California) on women's work in general, all show the tendency of the government to assume more and more the control of the conditions attending child-bearing, the unborn child and the infant after birth.

It is foolish to prophesy, but a review of the subject during the past twenty years alone indicates a rate of advance within the next twenty years, in the interest of the child of the future, through the study of the degenerating influences of the past, which gives us the hope that a constant lessening of feeble-mindedness, insanity, epilepsy, blindness, mental, moral and physical degeneracy may be brought about through government measures of control.

When Oliver Wendell Holmes said that the education of the child began several generations before its birth, he stated a fact that has a constantly widening application. The foundation for the child's nervous system is certainly well under way that far back, and it is in view of this that we must look for and encourage the preventive work of the future, through an extension of government interference, directing the interference by a careful study of the nervous child of to-day, the influences of every possible environment and occupation on him, his home, his parents and associates, work, play, temptation, emotion, excitement—in fact, everything that stirs his feelings in any way. It is with this part of the problem—the nervous child of to-day—that we, as physicians, are brought into contact.

Unfortunately, the problem rarely presents itself seriously to the average parent until it has taken a form far beyond the ability of the family to cope with, or a situation has developed in which the neurotic tendency appears in a form, the importance of which the parents are the last people in the world to suspect, and where some accident uncovers in part a most serious state of affairs unsuspected by the family, frequently with far-reaching ramifications only worked out by patient analysis. Vanity, sulking, unusual craving for notice or affection, irritability, violent outbursts of temper, the unusual persistence of what seems a single bad habit, may be all the parent sees. A few examples will serve to illustrate.

CASE 1.—D. S., a very clever girl of 12, through but two grades in five years of school life, nervous and emotional, living with her widowed mother, supposedly a working woman, but in suspiciously comfortable circumstances, is caught, after great effort and weeks of watching, picking pockets in a crowded shop. She was an artist at the job and asserted that she was taught by a man whom she met on the street and who promised her a doll. She said she met him the same day each week and practiced her art in the same shop. Her story was doubted by the police and her mother was suspected of being the accomplice. Examination of the mother showed a bleached blonde in an untidy but showy gown and revealed the fact that amateur prostitution was remunerative far beyond the precarious pickings of a child in the weekly shop adventures. She protested her ignorance of the child's acts. The child was congenitally syphilitic and had adenoids and huge tonsils. A little surgery and mercury made a normal child of her, and a chance for some association and memory-tests convinced everyone of her truthfulness. The nervous and emotional conditions attending her promptly disappeared and she promises to be a strong influence in straightening out the wayward mother.

CASE 2.—J. S., a large and well-developed boy of 14, is repeatedly expelled from private school on account of smoking and because of his general indifference. The headmaster of the last school he attended discovered other forms of abuse and, with the father's consent, sent the boy to me. He was a pleasing-mannered boy of the nervous, weak type who had been indulgently brought up in a small town where his father was a leading citizen, influential in the local government. The father had worked hard himself for his position in the business world and hoped to leave his family well provided for. His motives were good and he meant to be a kind and generous father, but he forgot that the boy needed some of the attention the father gave to his business far more than the boy needed the extra dollars. The mother was too nervous to have the strength to do more than worry and had also the idea that children just grew; she had not the faintest idea of the boy's mental processes or physical and mental needs. There was no history of alcoholism, insanity or unusual nervousness in any marked form in the family. Here was merely a weak boy, the product of his environment. The history that

* Read in the Section on Diseases of Children of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911

he gave me after friendly terms were established was this: He had lied and stolen as far back as he could remember; he had never been shown up with his lying or been caught stealing. Lying frequently saved a long explanation and it seemed always to work. Although he was indulged, it was easier to steal than to ask for money from his parent, so he always stole. It seemed the more certain way of getting what he wanted. For two or three years he had abused himself and had smoked and taken alcohol in some form. He gambled with the other boys in the town where he lived and with them visited houses of ill repute, although claiming only to drink beer while there. He had no power of concentration and his work at school did not interest him at all. He had never taken any systematic exercise, and had always eaten anything and all he wanted. He was unable to go through a day without planning in his mind how he might carry out one of the bad habits to which he had become addicted. His only form of activity, nervous or physical, directed itself in these channels. He had no ambition, no moral sense and no standards, and yet this nervous wreck came of a good family and apparently had far more than average advantages and environment. He came up in the juvenile court for stealing a box of apples.

CASE 3.—D. B., the son of a very rich and self-made father, and an exceedingly neurotic but ambitious mother, was dealt with differently by his parents. He was put through the paces by the father, rushed through the lower grades of school, carefully watched and kept at work, all his nervous energy directed into productive and absorbing channels of the parents' choosing, without a counterbalance of play and fun. He had hardly finished grammar school when he was rushed into a business he did not care for, to begin as a slave at the bottom. Fortunately for him, he broke down nervously and physically and after years of begrudgingly-given outdoor life this youth with a forceful and intense nervous activity has regained his physical condition, but has violent headaches from nervous exhaustion and a chronic tic of the facial muscles resembling a bad habit chorea.

The two latter cases represent opposite attitudes of parents, the thoughtless generous indulgence, and the hard narrow grind; they show how harmful two common types of environment may be and how heavily the responsibility of the failures rests on the parents.

CASE 4.—D. T., a girl of 17, whose aunt was epileptic and whose grandmother was alcoholic, locks herself up in a room for twenty-four hours at a time, and finally runs away, because she cannot have her way. She was never punished, or rather treated, for this form of self-indulgence when it began some years before, the excuse being that she was a delicate, nervous child. She ends by hurling anything she can lay her hands on at her mother when she is crossed in her wishes.

Merely ungovernable temper, trained to react the wrong way, and cured only by long continued and wise discipline; what is called in psychotherapy, reeducation. Such a case might easily be the beginning of a dementia præcox, but that unfortunate end could only be hastened by such indulgence and indecision as was brought about by a failure of the parents to understand the conditions.

CASE 5.—Another girl of 17 reads only dime novels, is dull in school, moody, irritable, vain, untruthful, exceedingly dirty in her habits, although belonging to well-to-do and refined but indulgent parents. She finally strikes a servant and the family wakes up to the seriousness of the situation. A properly trained nurse placed in charge of her, away from home, discovers the enormous extent to which self-abuse is carried on. Only the romantic, or possibly the very commonplace, opportunity had been lacking to ruin the girl's life forever. Here again physical, moral and mental reeducation—carried on for years—is the only cure.

An ungoverned temper in a girl of 12, leading her to precipitate a storm if every wish is not granted, is easily traced to the reaction of the apprehensive mother to the child's demands in early youth. The brain storms came easier and easier until the well-established habit held the whole family in terror. The small beginning of such a possible state was shown in my 4-year-old daughter when she soberly announced to the cook that if bread and butter with jam wasn't forthcoming at once, she would "make a dandy fuss." There should be only one outcome to such a crisis, and the parent who neglects the issue or thinks it too "cute" to warrant notice does the child infinite harm.

Babies learn to cry for whatever they want in the earliest days of life. The well-regulated nursery of a maternity hospital is usually as quiet a place as you can find, simply because the routine care leaves the baby always comfortable, and does not allow it to learn that crying brings about some grateful change. Of course if one seeks to soothe its crying by any measure out of the ordinary, it goes a long way toward teaching it to cry when it wants that form of relief again. It can be taught to cry in a day of bad handling. Carried further, such treatment teaches the child that a fuss generally brings what it wants, and the training of its nervous system to act in unnatural ways is well established.

Selfishness is an early developed trait, and in nervous children it leads to all forms of trouble, frequently before it is fully appreciated by the parent. A child who cannot have what it wants does not always make a fuss but may sulk, and this may take a form easily escaping notice, yet there may be violent emotional disturbance in the child. This is far from being the result of self-control, as one might think. The moody and depressed child is a harder problem than the excitable one in most cases, and requires more careful study and training. The ease with which its moods escape detection frequently leads to a form of self-pity and habits of self-indulgence quite innocent in the beginning, but terribly suggestive to the child who finds how much it can do without it being known.

Some years ago I assisted in carrying out a study of the influences of environment on boys from 8 to 15 years old, in which some extraordinary things were shown. A hundred or more boys, all attending school and members of a boys' club in the district where a large number of working people lived, were asked to answer a set of questions bearing on their likes and ambitions. All of these boys had been well trained in playing question and guessing games, and took this matter seriously. The list of questions asked for their favorite boy's and girl's names, favorite poem, song, color, game; what each wished to be when he grew up; what he would do with a hundred dollars if he had it; what he most wanted for Christmas; where he would go if he had a railroad ticket to any place he wished to go in the world; how he would spend a holiday if he had one and could do what he wished.

The result of the study was amazing. A sort of family history of each boy had been made on cards and it included all the names and the occupations of the male members of each family. There was hardly a boy whose ideas carried him beyond the confines of his home and his street. The popular occupation was the father's; family names and the hand-organ tunes overwhelmed all others in their popularity. No shadow of romance could be found in the desire for journeys to African jungles or Arabian gardens. Indeed, the deeply pathetic side of the situation was shown when it was found that dozens of boys in the club had never been to Golden Gate Park, the city's great playground, or the Cliff

House, reached without change of cars for a five-cent fare, and very few boys had crossed the bay. A very large number had never been north of Market Street, the main thoroughfare dividing the city. In no case did any of the boys want a railroad ticket farther than across the bay. Vigorous manly games appealed to them more than games of chance. The proverbial period of wanting to be president of the United States was not indicated in one boy, nor was there apparent lust for wealth or power, further than that centered in the desire to be a policeman. Two bicycles were the largest things wanted. Altogether, there was not a single unreasonable or incomprehensible answer. I have known many of these boys in the seventeen years that have passed since then, and there are successful lawyers, contractors and business men among them. There are very few who have not moved into better conditions than attended them then.

One cannot but take all this as indicating how sensitive children are to environment, how deeply they are influenced by it, and yet how generally the tendency is toward right interpretations and healthy ideas. I have cited this experience not alone to show the dependence of the child on its environment, but to discuss with you the value to the child of combined personal and class training. We saw the baby's training begun properly in the hospital nursery. We know that if not provided with a harmless and engrossing toy, the creeping infant is quite apt to reach for the live coals of the fire-place or the fringe of the table cover, on which rests the ink and a lighted lamp.

There is energy to be dealt with and, if it be not provided for in a normal and healthy way, the infant is bound to work out its own way which may not be so good.

This is equally true of the child, the youth, the young adult, the mature adult and the old man. We count on training and respect for law to keep the energies of mankind within reasonable bounds as the age of youth passes, and when we study the transgression of the law we come invariably on the neglect of training, the early misuse of energy, the absence of normal outlets and the continuance of hereditary degeneracy, as one sees so commonly in the alcoholic father and the vicious, highly nervous or feeble-minded child. In inverse proportion to the early training must be the magnitude of the machinery of the law and its forces for order, until finally we come to see that it is the common interest of us all as members of human society, toward which we have a tremendous responsibility, to work for the coming of the utopia in which the interests of the child and the future of the race are paramount to the selfish human interests in tariff on woolen goods, kid-gloves and champagne.

It would be impossible to outline any scheme for the treatment of nervousness in children except to direct the lines along which one may safely go. It can never be too soon to begin, whether it be the child of to-day or his descendant two decades hence.

One who would get into the spirit of the problem should take the time to read two recent books, "The Century of the Child" by Ellen Key, the Swedish leader of the feminist movement in Europe, who has aroused all Germany to active interest in what she calls the greatest problem of the age; and Jane Addams' "Spirit of Youth and the City Streets," in which she gives voice masterfully and pathetically to the cry of the child for a hearing.

SCHEME FOR HISTORY-TAKING IN CASES OF DELINQUENCY, FOR PURPOSES OF PROGNOSIS AND TREATMENT

1. Complaint against the patient.
2. Family history:
   Details of heredity, nationality, social tendency; defects, illnesses and habits; character, occupation, with special reference to contact with poisons.
3. Patient's past history:
   Medical, development, etc.
   Habits, school life, etc.
   Environment and character.
4. History of present trouble:
   Sequence of development of nervous habits.
   Sequence of development of bad habits.
   Efforts at correction.
5. Physical examination:
   Complete, including eye, ear, nose and throat.
   Evidences of developmental conditions associated with degeneracy.
6. Psychologic examination:
   Including analysis of patient's story.

350 Post Street.

ABSTRACT OF DISCUSSION

DR. JOHN A. COLLIVER, Los Angeles: For several years I have examined nearly every boy coming before the Los Angeles juvenile court. We have been pioneers in this physical examination as a method of dealing with juvenile delinquents. Nervous irritability has been of special interest to us and we have had many cases. We think environment is the most important cause; 95 per cent. of them are from "broken homes," i. e., homes in which the parents are divorced or separated, or in which one or both parents are dead; or in which the children are left to shift for themselves because of unfit parents. Thus there is absolutely no discipline. So the greatest influence in the production of delinquents is lack of proper parental care, and over this we have little or no control. Criminality begins at home. The earliest symptom is "talking back" without cause, at first with regret, but later with indifference. This is followed by lying; then by truancy from home; later from school; then by bad company; finally by theft, and the boy lands in the court. I believe there is a physical basis for much of this nervous irritability which is the beginning of crime. It is not the natural tendency for a boy to be good any more than it is natural to raise a weedless crop without cultivation. Animals early leave the parent protection and fight for themselves. The deportment of boys, says Hall, is worse at or about puberty than at any other time. The whole organism, and especially the nervous system, is undergoing a rapid change. The boy has to adjust himself to his changing environment. What you could have done with impunity would to-day land him in the court. So the irritability on the one hand and the lack of discipline on the other accounts, I think, for the majority of delinquents. This irritability arises from physical defects, poor nourishment or the like, and by their removal the child gets control of himself and moral improvement follows. We have found great changes following simple operations; while in thirty-six so-called hopeless cases the effects of a needed circumcision was to change the periodicity of their appearance in court from one month to eighteen months and many of them were never returned for misconduct. Reports show them doing well. We have found that boys who are frequently in court often change in moral conduct when nourishment is improved. Again, a boy gets the reputation of being incorrigible when the only trouble is that he does not hear or see properly. We are establishing in the hospital here a department of psychopathy for the observation of certain neurotic children under the assumption that some cases are purely mental.

DR. L. T. ROYSTER, Norfolk, Va.: The question of delinquency as put forth by Dr. Brown and the question of irregularities in school go hand in hand. I think the causative factors in these cases are physical, environmental and hereditary.

There are cases due to imperfect hearing or imperfect vision. The child loses interest because it cannot hear or see and it gradually goes down the line and drops down finally to crime. We cannot get away from environment, and education is a modification of environment; yet back of that, and most important, is heredity. This has been shown in the work of all investigators, from Galton, in England, to Dr. Goddard, in America, who took 2,000 cases of delinquency and put them on a basis of physical and mental factors. In the latter he found three classes, the mentally delinquent, the imbecile and the "moron," as he terms it. The physical errors can be corrected. Then we have the three grades of mental delinquency. There is one degree that can be corrected; the second class can be taught the ordinary trades. The third is a dangerous class. But in not a single case of these 2,000 children did he fail to find delinquency or feeble-mindedness in one of the four generations back of him. From this come not only the petty thieves but often the drunkards and prostitutes. It has been stated that no woman who enters on a life of prostitution is a normal woman, and I agree with that. Unquestionably genius begets genius, not, perhaps, of the same type, but genius, nevertheless; and the same is true of crime. This may be prevented by controlling these children from the beginning, by proper teachers and finally by the prevention of incompetents from marriage.

DR. F. R. BRANHAM, San Diego, Cal.: I am tremendously interested in the play-ground movement. But I don't agree with Dr. Colliver when he states that boys are born bad and are going to be bad. They have a lot of vitality. Any good boy that amounts to anything has a lot of it in him and the only thing is to give him a chance to work it off legitimately. The boys in the country seem to have no trouble of that kind, and it is because of the outdoor life. In the cities they do not get a fair show. These suggestions of Dr. Brown are all right, but let us look after the normal boy and give him an opportunity to work off some of his steam and we will find that he will get along all right.

DR. D. S. HANSON, Cleveland, O.: This study of the evolution of the child has been very interesting to me. Some years ago in our country districts the parents were assessed for a few months of school for their children. After a while the teacher was paid by the state, then we came to the graded schools in country districts, and in our cities improvements have gone on rapidly. The child was first furnished free books, then the poor children were given their breakfast, and later they were inspected in reference to their health. In some cities we have a double inspection, one for the school board and one for the health department. The children have their eyes inspected and attention is given to their hearing, and other physical defects noted, and if the same process keeps going on much longer it looks as if in the next forty years the state will take the child from the mother's breast and care for it. Yet I do know that what we are doing for the children is going to have wonderful results. If, for example, every adult had sound teeth, chronic disease would be reduced 50 per cent. in a few months' time. If you improve the children's eyes and hearing, you give them an opportunity to change from dull and apparently stupid, oftentimes to wide-awake and interesting children.

DR. JOHN A. COLLIVER, Los Angeles: I rise to correct an impression. I did not say that boys were bad. I said it is not a boy's natural tendency to be good. When they are good it speaks well for the parents. The delinquency among the boys in the play-grounds section decreased at once, and I think that is a matter of discipline and training.

DR. PHILIP KING BROWN, San Francisco: I want to state my belief in the goodness of boys and to point out that of course you must give the boy an interesting thing and a helpful thing to play with. He will enjoy it a great deal more. You will accomplish the desired result of directing his energies properly in two ways; you give him something that is positively good and remove the chance of his selecting something positively harmful. Of course we should be connected with the play-grounds association, just as we should with the pure milk commission. We should be connected with the best things.

AN UNUSUAL CHOLERA CARRIER

R. H. CREEL, M.D.
Passed Assistant Surgeon, U. S. Public Health and Marine-Hospital Service
ELLIS ISLAND, N. Y.

The following case of a convalescent cholera carrier is one of about sixty-two cholera cases and carriers recorded at the New York Quarantine Laboratory in the bacteriologic examination of Italian immigrants during the months of July, August and September.

Since, from the time of the initial symptoms to the last positive examination, the interval was only fifty-four days, which period fell short of the longevity of several reported cases, the main point of interest in this case attaches not so much to the longevity of the cholera vibrios in the intestinal tract as to the irregularity of their presence in the stool.

The case occurred in a sailor aboard a transatlantic liner sailing from Genoa and Italian way ports. August 4, he presented himself to the ship's surgeon, complaining of vomiting and diarrhea. The symptoms were of such moderate nature that the ship's surgeon made the diagnosis of fireman's cramps, but on the advice of the royal Italian commissioner, who considered the case suspicious, the patient was isolated in the sick-bay.

August 17, the vessel arrived at New York Quarantine, and stool specimen was sent to the laboratory. Bacteriologic diagnosis of cholera was made by Dr. C. E. Baldwin, in charge of laboratory, and myself. The patient was sent to Swinburne's Island and at varying intervals stool specimens were sent to the quarantine laboratory for examination.

From August 17 to 30, all examinations were positive. On August 30 occurred the first negative examination. September 1, it was likewise negative. Thus far only a small amount of material was used to make the inoculation: as much as would adhere to a small cotton swab was planted in a peptone tube. September 2, a larger amount was used. Approximately 4 gm. of feces were planted in a flask of 300 c.c. of Dunham's peptone, and all subsequent inoculations were made of same amount and in same way.

From August 30, date of first negative examination, to September 27, date of last positive examination, the cholera vibrio was found present in four examinations and was absent in six (see table).

On the day of the last positive examination a smear from the original inoculation, after six hours' incubation, showed a few suspicious curves, atypical in form and bizarre staining.

In fact, I was not thoroughly satisfied that vibrios were present. Subcultures, however, showed the vibrios in large numbers.

Because of press of routine work at the station no further specimen was sent to the laboratory till October 8, at which time the examination was negative, and continued so on the 10th, 12th, 14th and 18th, when the patient was discharged.

Throughout the patient's detention at Swinburne's Island, Dr. F. C. Clark and Dr. John Hamilton gave him potassium permanganate and hexamethylenamin (urotropin) with a view to destroying the vibrios. Both of these drugs were apparently without effect.

Most obstinate constipation was a persistent condition of the patient throughout. Stools were obtained only after the administration of large doses of some such cathartic as calomel, magnesium sulphate, compound cathartic pills or elaterium. Even large doses of these drugs had no more than a mildly cathartic effect. Stress is laid on this condition, because it is probable that the persistency of the cholera organism was due to the lack of thorough and repeated evacuation of the intestinal canal.

The question arises as to the cause of intermittency of the vibrio in stool. Error of technic can be eliminated, for Dr. A. J. Bendick, working from one stool specimen, obtained parallel results.

Gall-bladder infection does not seem likely, as cholera is not a bacteriemia, and direct extension of infection from the intestinal canal does not seem probable.

Considering all conditions, the assumption that there were residual masses of fecal matter containing the vibrios, a part of which was evacuated only at times of positive examinations, would furnish a logical explanation of the irregularity of the vibrios in stool.

If this condition operated to the continuance of vibrio in stool, doubtless the patient would have harbored the organism a much longer time had he not been given purgatives.

This case emphasizes the importance of thorough stool examination of all cholera patients prior to discharge.

It likewise illustrates the superiority of a bacteriologic standard for quarantine procedure in cholera work over the old clinical standard. Not so long ago this patient would have been discharged from quarantine after a wholly arbitrary period of detention and long before he had ceased discharging vibrios.

As to treatment, nothing new is offered. Hexamethylenamin and potassium permanganate did not seem to possess any value. In these cases of protracted carriers, repeated catharsis would seem a valuable measure. As an alkaline reaction is essential to the viability and propagation of the cholera vibrio, large and repeated doses of *B. bulgaricus* would seem to be a logical means of destroying the vibrios.

TABLE SHOWING STOOL EXAMINATIONS IN THE CASE OF AN UNUSUAL CHOLERA CARRIER

Date of Examination	Amount of Specimen	Character of Stool	Cholera Vibrio	Medication Before Stool
8/18/11	Swab.	Formed....	+ +	—
8/20/11	Swab.	Formed....	+ +	Mag. Sulph. ℥ss
8/30/11	Swab.	Formed....	— —	Mag. Sulph. ℥i
9/1/11	Swab.	Formed....	— — —	.....
9/2/11	4 gm.	Formed....	+ +	C. C. Pill iii av. Ol. Ricini ℥i
9/6/11	4 gm.	Pultaceous.	— — —	Ol. Ricini ℥i
9/9/11	4 gm.	Pultaceous.	+ +	Calomel, grs. v Mag. Sulp. ℥i
9/14/11	4 gm.	Formed....	— —	.....
9/17/11	4 gm.	Liquid.....	+ +	.....
9/19/11	4 gm.	Formed....	— — —	Mag. Sulph. ℥ii
9/25/11	4 gm.	Formed....	— — — —	.....
9/27/11	4 gm.	Liquid.....	+ +	C. C. Pill iii
10/8/11	4 gm.	Liquid.....	— — — —	Elaterium .012 tid.
10/10/11	4 gm.	Liquid.....	— — —	Elaterium .012 tid.
10/12/11	4 gm.	Liquid.....	— — —	Elaterium .012 tid.
10/14/11	4 gm.	Liquid.....	— — —	Elaterium .012 tid.
10/18/11	4 gm.	Liquid.....	— — —	Elaterium .012 tid.

For the clinical notes in this case I am indebted to Dr. John Hamilton.

TECHNIC

The stool specimen was planted into the peptone (Dunham's) solution and incubated for six hours. At end of this period a loopful of the surface growth was subinoculated into a fresh tube of peptone solution, and this in turn was incubated six to eight or nine hours.

In making subinoculations, care was always exercised in avoiding any surface pellicle. As the element of time is of considerable importance in making subcultures, these were made as near as possible at end of six hours. Smears were made from subcultures after ten hours. If examination of these showed no vibrios, the specimen was considered negative. If vibrios were seen in smear, the subculture was plated on agar and the plates incubated, generally over night. Vibrio colonies from the plates were fished and planted on agar slant. When sufficient growth was evident, an emulsion of the culture was made in sterile water and droplet of this placed on glass slide and tested for agglutination with specific serum of a titer of 1 to 15,000. Only the macroscopic method was used. Instantaneous agglutination in dilution of 1 to 500, evidenced by distinct curdling, was required for the determination of a positive result. Normal serum controls were always employed. It may be mentioned that while, on different occasions, the smears from originals showed but few vibrios and those only after examination of a number of fields, the smears from subcultures, at those times when specimens were positive, showed large number of vibrios in all fields observed. Subcultures were adhered to, not only in this case, but for all routine carrier examinations done at the laboratory, for several reasons. The first is to avoid useless plating. Not infrequently a smear will show a few isolated, suspicious curves, artefacts due to stain, detritus of media or distorted bacilli or even non-pathogenic vibrios that do not increase or appear in subculture. These forms prevent the discarding of the culture as negative. This applies only to smear from original culture, for however small the number of cholera or cholera-like vibrios in the specimen, and however scarce they appear in smear from original, the smear from subculture will show large number of curves in every field.

Second, subculturing facilitates isolation of cholera colonies from plates. If only a few vibrios are in original, and this may frequently be the case in carriers, they may be lost on plating, either through the dilution of culture incidental to plating, or through overcrowding by other colonies.

The method of plating from original with negative results probably explains origin of term "non-enrichment." Such a condition as latency in cholera seems incredible. That any cholera vibrio, fresh from the intestines, will not multiply in great numbers when planted in optimum medium seems most improbable.

These remarks on subculturing apply to cholera carriers, not to actual cases.

The cause of the intermittency of the vibrio in stools can be only a matter of conjecture, but, whatever the reason, the same condition might obtain in any carrier and this case emphasizes the necessity of repeated examinations before discharging any cholera carrier or case from detention.

EXPERIENCES WITH A VACCINE IN THE TREATMENT OF CHANCROIDS

A PRELIMINARY REPORT *

ROBERT H. HERBST, M.D.
AND
L. C. GATEWOOD, M.D.
CHICAGO

This work was begun in the belief that the *Bacillus chancri mollis*, or Ducrey bacillus, as it is more commonly called, was the most important etiologic factor in the production of chancroids, and that vaccines prepared from this organism might be of value in the treatment of these lesions. With this in view, attempts were made to obtain the organism in pure culture from chancroids seen in the clinic at the Rush Medical College. Up to the present time we have been unsuccessful in this attempt, although we have examined bacteriologically a considerable number of cases and have obtained some results which we believe are worthy of report.

* From Dr. Belfield's Clinic, Rush Medical College, and the Otho S. A. Sprague Memorial Institute, Chicago.

The blood-agar medium which we have used in this work is prepared by melting plain agar, cooling it in a water-bath to 45 C., and adding fresh sterile, defibrinated human blood. The amount of blood used depends on the organisms to be grown on the medium, and varies from 10 drops per agar-slant tube to an amount equal to one-half of the amount of agar used. The tube is shaken until the blood is thoroughly mixed with the agar, and it may then be inoculated and poured into Petri dishes, as in the ordinary method of isolating organisms by plating, or it may be cooled as a blood-agar slant tube. In making the cultures the first inoculation is made directly from the surface of the chancroid, and the lesion is then washed with sterile salt solution to remove the debris and surface organisms which are usually of no etiologic importance. The floor of the ulcer is scraped with a stiff platinum loop and blood-agar plates are inoculated with the material obtained in this way. In our first work, owing to the inadequate facilities for bacteriologic work in the clinic, we made our cultures from the lesions on blood-agar slant tubes and, where more than one organism was found in smears from the lesions or from the cultures thus made, plates were inoculated from these cultures to isolate the various organisms present. The organisms, having been isolated, either by plating directly from the lesions or from slant cultures, are next identified by their staining properties and their morphologic and cultural characteristics, and vaccines are prepared from pure cultures of these organisms. Human blood-agar slants, prepared as described above, are incubated for twenty-four hours to prove their sterility. The water of condensation is then pipetted off with a sterile Pasteur pipette and the tubes are inoculated with the various organisms in about the same proportions as they occurred in the original cultures. Thus if, for example, there were forty colonies of Organism A and twenty colonies of Organism B on the original plate, we use twice as many pure cultures of Organism A as of organism B in the preparation of our vaccine. This method, it will be understood, is purely arbitrary, and has been adopted only until the time when the etiologic importance of the various organisms shall have been more completely worked out. The cultures are incubated for twenty-four hours at 37 C., and the growth is washed down with a small amount of sterile isotonic salt solution. The bacterial suspensions thus obtained are pipetted off into a sterile flask, shaken well to insure the breaking up of all of the clumps of bacteria and the thorough mixture of all of the suspensions used, and then heated to kill the bacteria.

The method recommended by Wright and generally used in vaccine laboratories is to heat the bacterial suspension to a temperature of 56 C. for a period of from thirty minutes to one hour, depending on the length of time required to kill the organisms, and our first vaccines were prepared in this way by heating in the thermostat for one hour at 56 C. By a few experiments, however, we found that the bacteria could be killed at lower temperatures, and this was believed to be very desirable. It has been shown that different proteins have different coagulation points, just as different liquids have different boiling points, and that mixtures of solutions of various proteins undergo a fractional coagulation, as the temperature of the mixture is gradually raised from 40 C. to 60 C., very much as liquids undergo fractional distillation under similar circumstances. Therefore, we believe that by using a lower temperature more of the bacterial cell proteins will remain in solution, and a more potent vaccine should be obtained. To insure the death of all of the bacteria at the lower temperature, it is necessary to heat for a longer time, and our vaccines are now prepared by heating for twelve hours at 50 C. At the end of this time a blood-agar plate is inoculated with 1 c.c. of the heated suspension, to prove that all of the organisms are dead. If any colonies develop on this plate, the suspension is heated for four hours at 52 C., and again tested, and in every case this has been sufficient to kill all of the bacteria. As soon as the suspension has been proved sterile, the number of bacteria per cubic centimeter is determined by the Wright method and by counting the bacteria with the ordinary blood-corpuscle counting apparatus. The suspension is then diluted with sterile isotonic salt solution to the desired strength, usually about 200,000,000 bacteria per cubic centimeter, and preserved with 0.5 per cent. phenol.

We are prepared at the present time to report the complete bacteriologic examination and preparation of vaccines from twenty-six typical clinical cases of chancroids. In this entire series we have only found two strains of organisms which could possibly be the so-called bacillus of Ducrey. In the first instance we found a small polar-staining, Gram-negative bacillus in a culture which also contained *Staphylococcus pyogenes albus*. This bacillus would not grow on ordinary mediums, and grew very scantily on blood agar; because of the rapid growth of the staphylococcus with which it was contaminated it could not be obtained in pure culture and very quickly died out. In so far as we were able to observe it in mixed culture, it corresponded in every way with the *Bacillus chancri mollis*. From another case we obtained in pure culture an organism which corresponded in size, appearance and staining properties with *Bacillus chancri mollis*, and grew only on blood agar, but even there its growth was very scanty, and it died out very quickly. In the plates from which this organism was obtained we also found the *Micrococcus tetragenus* and a spore-forming saprophytic bacillus.

From thirteen of our cases we isolated bacilli of the diphtheria group, the so-called pseudodiphtheria bacilli. A word of explanation may be necessary in regard to this terminology, as the text-books in common use are not very clear on the nomenclature of the organisms of this group, and describe the pseudodiphtheria bacillus as a non-pathogenic organism of the diphtheria group. The recent work on this group of bacteria, however, has shown that the morphologic differences between the true diphtheria and the pseudodiphtheria bacilli are not so constant as they were formerly believed to be, and that many of the pseudodiphtheria forms are distinctly pathogenic. According to the more recent views, the differentiation between the true diphtheria and the pseudodiphtheria organisms is based on tests of toxin formation and on the protection of experimental animals with diphtheria antitoxin against the pathogenic effects of injections of the bacteria to be tested. All of those members of the group which do not form toxin, and against which antitoxin does not protect, are placed in the class of pseudodiphtheria organisms, and this class thus contains organisms of widely different characteristics, as regards size, shape, growth on mediums, pathogenesis, etc. Some are large, while some are quite small; some grow very abundantly and some grow very scantily, while some

grow only on blood mediums. As a rule, they are Gram-positive, but some strains are Gram-negative. Polar staining is fairly constant, as is also the tendency of the organisms to assume the parallel arrangement, the so-called palisade or Chinese house grouping so valuable in diagnosis. Strains of pseudodiphtheria bacillus may thus present the various characteristics of the *Bacillus chancri mollis*, and so far as we have been able to learn from our work or from the work of others, it seems probable that the *Bacillus chancri mollis* may be a member of the diphtheria group, although this point has not yet been proved because of the difficulty of obtaining the organism. We hope soon to be able to present further data on this point. Non-pathogenic strains of the pseudodiphtheria bacillus are comparatively common in the urinary tract and pathogenic forms are occasionally found, cases of cystitis due to this organism having been reported and abscesses having been produced in guinea-pigs by injections of organisms from this source. This has led us to believe that the strains of pseudodiphtheria bacillus which we have isolated from chancroids were the important etiologic factor in the production of those lesions. We are now injecting suspensions of this organism in normal salt solution into the subcutaneous tissue of the abdominal wall of normal healthy guinea-pigs, and by such injections we have produced marked local inflammatory reactions, persisting over a period of ten days from the time of the injection, and gradually subsiding. This reaction is sufficient to prove that we are dealing with pathogenic strains of the pseudodiphtheria group. In one instance we have succeeded in producing a lesion showing all the characteristics of a typical chancroid, with enlargement of the axillary glands. This lesion developed on the fourth day after the inoculation was made. We have further succeeded in recovering from this lesion, and growing in pure culture, a bacillus identical to the one used for inoculation. As far as we know, this is the first successful animal inoculation that has been made other than in the monkey.

Among the other organisms which we have found are the *Staphylococcus pyogenes albus*, occurring in thirteen cases; the *Staphylococcus pyogenes aureus*, occurring in four cases; the *Micrococcus tetragenus*, in two cases, and the *Streptococcus pyogenes*, in two cases, in one of which it occurred almost in pure culture. A spore-forming saprophytic bacillus, probably *Bacillus subtilis*, although not definitely identified, was found in four cases in cultures made from the purulent or necrotic material in the floor of the ulcer. It was non-pathogenic and of no etiologic importance, and was not used in the preparation of the vaccines because it would be impossible to kill the spores without using temperatures which would so change the composition of the bacterial cell as to render it of no value for a vaccine. In three of our cases we were unable to obtain any growth or to obtain any organisms in smears. These three cases were all of considerable duration at the time when they were first seen and the inoculations made, and it is thought probable that the organisms which gave rise to the pathologic process had become so few in number and so deeply situated that they could no longer be recovered by ordinary methods. We were unable to obtain the patients for subsequent inoculations. In another similar case the only organism found in the first inoculation was a large spore-forming saprophytic bacillus, probably *Bacillus subtilis*. Three weeks later plates were again inoculated and gave cultures of *Staphylococcus pyogenes albus* and *aureus*, whereas the saprophyte had disappeared from the lesions.

Thirty-eight patients have been treated with the vaccines. Of this number, seven patients deserted the clinic after the first or second injection, which necessarily has not given us sufficient time to draw any adequate conclusions. We also must add at this time that, in order to keep control over our patients, some local treatment was essential. We used a very weak watery solution of methylene-blue applied in the form of a small compress.

Eliminating the seven cases mentioned above, we have remaining in our present series thirty-one cases to report. These were all selected cases of clinical chancroids. In most instances bacteriologic examinations were made, a large percentage of which showed a bacillus which evidently belongs to the pseudodiphtheria group, with a contamination of staphylococci.

Differentiation from syphilis was effected by a systematic search for spirochetes in early cases. In long-standing cases a Wassermann test was made. This practically limited our cases to those of pure chancroid.

The vaccines were administered by subcutaneous injection into the abdominal wall. Little or no reaction followed these injections. In a few cases a slight redness appeared and a slight tenderness at the site of injection, both usually disappearing in twenty-four hours. We have not observed any marked constitutional disturbance following the injections.

Our dosage ranged from 50,000,000 to 400,000,000, using from 1 to 2 c.c. for each injection. In our early work we limited the injections to one a week; later on we increased this to two a week, and in one instance we even gave an injection on ten consecutive days, with no bad effects whatever, and a decided improvement in the local condition. Of the thirty-one cases cited above, we obtained an absolute cure in twelve, the time varying from five days to three weeks. In seven others we noted a decided improvement following the injections, although we cannot conscientiously ascribe the result to the vaccine, because either the time required was too long or the healing of the ulcers incomplete. Some of the latter are still under treatment.

At first blush these results may not seem in any way encouraging. We must bear in mind, however, that in the early cases a stock vaccine was used, which contained an organism, in small number, supposed to be the Ducrey bacillus, and a strong contamination of staphylococci. Later on a vaccine composed largely of a bacillus belonging to the pseudodiphtheria group, together with a small number of staphylococci, was used, with far better results. The following case serves as a good example:

CASE 1.—*Patient.*—P. O., aged 28, entered the genito-urinary clinic at Rush Medical College on March 6, 1911. Previous history was negative. Five days after exposure he had noticed a small lesion on the under surface of his prepuce, near the frenum, which grew rapidly in size. On examination this lesion was found to be 3 mm. in diameter. The ulcer was treated locally for two months, without any sign of improvement.

Treatment and Result.—On May 6 he was given his first injection of vaccine, our original stock vaccine being used. This was repeated weekly for some time, during which period a new ulcer and a bubo developed, the old ulcer continually increasing in size. From these lesions we made a culture and obtained therefrom an almost pure growth of pseudodiphtheria bacillus with a slight contamination of *Staphylococcus albus*. A vaccine was prepared from this culture and administered twice a week for two weeks. At the end of this period the lesions had entirely healed and all that remained of the bubo was a small, hard gland, about the size of a bean.

Since observing this case, we have used either the pseudodiphtheria and staphylococcus as a stock vaccine, or an autogenous vaccine, and our results have been markedly better. The following case is a striking example of a rapid cure:

CASE 2.—*Patient.*—R. M., aged 22, entered the clinic in the early part of June. Eight weeks before, he had noticed three ulcers on his penis, one on the glans penis and two on the under surface of the prepuce, one located near the frenum. The prepuce was edematous and partly phimosed, discharging a large quantity of foul-smelling pus. He had been treated locally for eight weeks, during which time this condition became worse.

Treatment and Result.—On June 5 he was given 30 minims of our pseudodiphtheria stock vaccine, containing 200,000,000 per c.c. He reported that the day following the injection there developed a painful area, extending from the site of the injection to the inguinal glands to that side. He also stated that this area was very red. This disappeared in twenty-four hours. On the third day after the injection was given he appeared at the clinic showing the following condition: The phimosis had entirely subsided and the three lesions were almost healed. Two days later, or the fifth day after the injection, Dr. Belfield demonstrated him before the Alumni Association of Rush Medical College, and by this time the lesions had entirely healed.

CONCLUSIONS

This being entirely in the nature of a preliminary report, we cannot draw any positive conclusions. We do feel, however, that the following points may be considered:

1. In a majority of the cases examined we have found an organism belonging to the pseudodiphtheria group, in some instance almost in pure culture.

2. A bacillus, non-pathogenic, belonging to this group, and morphologically identical to what we have found is commonly present in the urinary tract and on the genitalia.

3. Clinically, we rarely see chancroids on clean individuals, while in dispensary practice they are very common. In other words, filth seems to play an important rôle as an etiologic factor.

Taking these three points into consideration, is it not possible that the condition (so long described as Ducrey's disease, and presumably due to a specific organism called the Ducrey bacillus) is in reality in many instances an infection due to a bacillus belonging to the pseudodiphtheria group, which has been rendered pathogenic through the presence of filth?

Our results show a trifle less than 39 per cent. cures, and at first sight could hardly be considered in any way conclusive. This percentage could be made higher if we had not included in this series of thirty-one cases all our early ones, in the treatment of which we have evidently erred in using a non-potent vaccine. We trust, however, that further experimentation along these lines will insure a greater success than we have heretofore attained.

32 North State Street.

Making Cities Better.—Newark, O., is setting an example to other cities, according to *Collier's:* "On one day over 1,300 loads of rubbish were taken out of the town. On Arbor Day over 300 trees were planted by 3,500 school children. Sixty cash and merchandise prizes have been given for the most attractive flower beds. The playground problem is being handled energetically. The people have been made to feel that they want to help to prove Newark a model town of 25,000; to make it larger; and, above all, to make it every month a better place for their children to grow up in."

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

LACTIC BACILLARY TABLETS-Fairchild.—Lactic Bacillary Tablets-Fairchild are tablets said to be made from a practically pure culture of the *Bacillus bulgaricus.*

The culture of the Bulgarian bacillus is obtained by inoculation and incubation on modified Cohendy peptone-sugar-broth medium. This culture is reduced to a pulverulent form by the addition of sterile lactose, desiccated and compressed. The tablet is friable and contains an abundance of the true Bulgarian lactic acid bacterium.

In the standardization of this product one tablet is placed, under aseptic precautions, in 100 Cc. of carefully sterilized centrifuged milk in a sterile flask and kept in the thermostat for forty-eight hours at 40° C.

After incubation for about twenty-four hours the milk should form a coagulum with some slight separation of serum; after about forty-eight hours the milk develops the acidity, about 2 per cent. actual lactic acid, characteristic of the Bulgarian sour milk; and under the microscope shows abundance of the Bulgarian bacilli. This fermented milk by vigorous agitation forms a homogeneous thick fluid, of a marked sour taste, free from bitterness, or sliminess, or objectionable physical characteristics.

Actions and Uses.—The lactic bacillary tablets are designed for internal administration in the treatment of intestinal fermentative diseases by the Bulgarian bacilli, with the design of accomplishing the acclimation of the bacilli in the alimentary tract, so as to secure their characteristic action against putrefactive fermentation by the production of lactic acid.

Dosage.—One or two tablets before or after meals. The diet should not contain an excess of proteid, but should afford sufficient sugar. The tablets should be kept in a cold place and should not be used after the date given on the label.

Manufactured by Fairchild Brothers & Foster, New York. No U. S. patents or trademarks.

SALVARSAN. — Arsenphenol-amin hydrochloride. — Arsenobenzol.—"606."—Salvarsan is 3-diamino-4-dihydroxy-1-arsenobenzene hydrochloride, $HCl.NH_2.OH.C_6H_2.As:As.C_6H_2.OH.NH_2.HCl + 2H_2O$, corresponding to 31.57 per cent. arsenic (As).

Salvarsan is prepared by the nitration of p-oxy-phenyl-arsinic acid and subsequent reduction and condensation of the resulting nitro-phenyl-arsinic acid.

Salvarsan is a yellow, crystalline, hygroscopic powder, very unstable in air. It is readily soluble in water, yielding a solution with an acid reaction. The addition of sodium hydroxide solution to an aqueous solution of salvarsan, in the ratio of two molecules of sodium hydroxide to one of salvarsan, precipitates the free base ($NH_2.OH.C_6H_2.As:As.C_6H_2.OH.NH_2$). On the addition of an aqueous solution of sodium carbonate to an aqueous solution of salvarsan, a precipitate is produced which is insoluble in an excess of the reagent.

An aqueous solution of salvarsan is not affected by the addition of dilute hydrochloric, nitric or sulphuric acids.

When salvarsan is heated with an alkaline solution of potassium permanganate the permanganate solution is reduced and ammonia given off.

The addition of ferric chloride solution to an aqueous solution of salvarsan produces a brownish-violet color, which gradually changes to a dark red; finally the liquid becomes turbid.

Silver nitrate solution added to an aqueous solution of salvarsan acidified with dilute nitric acid, yields a dark yellow precipitate which rapidly becomes black.

The addition of concentrated nitric acid to an aqueous solution of salvarsan produces a yellowish-white precipitate. On further addition of the acid the precipitate redissolves and the solution becomes dark red.

The arsenic content of salvarsan may be estimated according to the method described in "Reports of the Chemical Laboratory of the American Medical Association," vol. iii, p. 97.

Actions and Uses.—Salvarsan is asserted to be useful as a specific remedy for syphilis in all stages except in parasyphilitic affections, such as tabes and general paralysis. It is

asserted to give especially favorable results in those cases which prove rebellious to mercury and iodides. According to available data, the remedy can be employed with the prospect of cure in incipient tabes, early paralysis, and epilepsy due to syphilis, only in those cases in which its use is begun immediately after the first symptoms of the secondary disease have appeared.

It is stated that the remedy is useful in all spirillum affections, such as malaria, relapsing fever and frambesia, and it is asserted to be an available substitute for arsenic in the treatment of diseases of the skin, nerves and blood.

The remedy is contra-indicated in severe disturbances of the circulatory organs, advanced degenerations of the central nervous system, fetid bronchitis, as well as cachexias, unless these are a direct result of syphilis; also in those patients who have pronounced idiosyncrasy against arsenic. According to Leisser, Michaelis, Spiethoff and others, diabetes, nephritis and tuberculosis do not constitute contra-indications for the remedy.

It should be employed with the greatest caution, if at all, in the presence of eye disease even when caused by syphilis.

Dosage.—0.3 to 0.6 Gm. (5 to 10 grains).

For children from 0.2 to 0.3 Gm. (3 to 5 grains). In infants doses of from 0.02 to 0.1 Gm. (⅓ to 1½ grains) may be used. The dose should be varied according to the strength and condition of the patient. Salvarsan can be administered subcutaneously, intramuscularly or intravenously. For a subcutaneous and intramuscular injection a suspension in a neutral fluid is commonly employed. This suspension is prepared as follows: The weighed amount of salvarsan is triturated with 0.35 Cc. normal sodium hydroxide solution to each 0.1 Gm. of salvarsan. To this liquid a solution of 0.1 Cc. of normal sodium hydroxide solution for each 0.1 Gm. of salvarsan in 8 Cc. of sterile water is added drop by drop until the liquid is exactly neutral to litmus paper. If the neutral point is passed the excess of alkali must be carefully neutralized by a weak solution of hydrochloric or acetic acid. Subcutaneously, salvarsan may also be administered in form of oily suspensions.

These suspensions should be injected at once, using a syringe with a very thick platinum needle.

For intravenous injection a clear alkaline solution is prepared as follows: The weighed quantity of salvarsan is triturated with 0.7 Cc. normal sodium hydroxide solution for each 0.1 Gm. of salvarsan and then more of the alkaline solution is cautiously added until complete solution occurs.

This solution is diluted with from 100 to 250 Cc. (3 to 8 ounces) of sterile physiologic salt solution (0.9 per cent.) and filtered through a sterile filter.

The contents of a tube should be used at once after opening and under no circumstances should the contents of a tube damaged in transportation or any remnants of the powder from previously opened tubes be used.

Manufactured by Farbwerke vorm. Meister, Lucius and Bruening, Hoechst, a. M., Germany (Victor Koechl & Co., New York). U. S. patent No. 986,148 (March 7, 1911; expires 1928). U. S. trademark No. 40,734.

Salvarsan 0.6 Gm. Tubes.—Each hermetically sealed tube contains salvarsan 0.6 Gm. (10 grains).

Therapeutics

VOMITING OF PREGNANCY

The most common complication of pregnancy is nausea and vomiting. This may commence four or five weeks after conception takes place and continue for a few weeks or months and then cease, or it may continue during the greater part of the pregnancy. It may be slight, consisting of a transient nausea most often occurring in the morning before breakfast, or so severe that the patient vomits all the food taken and nutrition is seriously impaired. This latter condition is commonly spoken of as the pernicious vomiting of pregnancy.

A trouble which is so common, and which is often very obstinate, has naturally been the subject of much study, and countless remedies and plans of treatment have been suggested for its relief. The attempt has been to ascertain the underlying cause of the trouble, and to classify cases according to the underlying condition.

J. Whitridge Williams, of Baltimore (*Amer. Jour. Med. Sc.*, Sept., 1906, p. 343), has offered such a classification under three heads: (1) reflex, (2) neurotic, and (3) toxic. Most of the severe cases of vomiting of pregnancy, he believes, are of toxic origin and may be detected by an examination of the urine, in which there will be found "a decided decrease in the amount of nitrogen excreted as urea, and a marked increase in the amount put out as ammonia." When he finds this change present Williams believes that the condition of the patient is serious, and feels warranted in terminating the pregnancy at once. This condition of disturbed metabolism, as indicated by the increase of ammonia nitrogen in the urine, he believes to be frequently associated with a disturbance in the liver consisting of a destruction of the central part of the lobule, the cells of which become necrotic, with fatty degeneration of the cells of the peripheral parts.

Other observers disagree with Williams in regard to the significance of this excess of ammonia nitrogen in the urine. F. P. Underhill and R. F. Rand, of New Haven (*Arch. Int. Med.*, January, 1910, p. 61), produce evidence to substantiate their view that this excess of ammonia nitrogen in the urine of patients suffering from pernicious vomiting of pregnancy is not due to any degenerative change in the liver, and is not especially characteristic of the vomiting of pregnancy, but is characteristic of a condition of inanition such as is observed in starvation, and such as takes place in the human subject when food is not taken at all, or is persistently rejected.

In treating the nausea or vomiting of pregnancy, naturally one endeavors to find some cause which may produce it or which may aggravate it. The various excretory organs should be carefully observed to learn if they are doing their proper work, and especially the bowels should be regulated, an easy copious movement each day being secured, if necessary by the employment of some medicine, such as a pill containing a small quantity of aloes with nux vomica or strychnin to be taken at night, or a saline, such as the phosphate of soda or the tartrate of potassium and sodium, in the morning.

A very good laxative combination, made into tablets, pills, or capsules, and one that does not tend to necessitate an increase of the dose, is as follows:

R	Gm. or c.c.		
Strychninæ sulphatis	.0015		gr. 1/40
Aloini	.02	or	gr. 1/3
Pulveris ipecacuanhæ.....	.03		gr. 1/2
Extracti belladonnæ foliorum.....	.006		gr. 1/10

M. et fac tales capsulas 30.

Sig.: A capsule after supper.

While phenolphthalein is many times a very good laxative, it should not be given for a long time, as it is likely to cause intestinal irritation.

Such patients are often troubled not only by nausea and vomiting, but also by sour stomach, which is frequently relieved by the use of the milk of magnesia.

It might naturally be supposed that the food taken would have considerable influence on the occurrence of nausea and vomiting. Some, assuming an analogy between the nausea and vomiting of pregnancy and the same condition occurring in gastritis, have believed that similar foods should be employed in the two conditions, and have made an effort to treat these patients by giving

liquid and easily digestible food, such as milk, or broths, or milk toast. This sort of feeding sometimes proves efficacious, but often fails. Noting this, Dr. Louis Kolopinski of Washington (*New York Med. Jour.*, June 9, 1906, p. 1173) advocated a different sort of diet. He suggested that what the mucous membrane of the stomach needed in these patients was something which should stimulate the natural functions of the stomach. He therefore recommended for breakfast, in this condition, fried ham or bacon, without coffee or other liquid with the heal, and frequently observed favorable effects.

The distinction should certainly be made from a real gastritis, i. e., inflammation of the mucous membrane of the stomach and a purely reflex vomiting and reflex nausea. If the vomiting is excessive, of course the stomach will become more or less congested. If there is not much vomiting and a good deal of reflex nausea the circulation in the stomach is likely to be poor and the activity of the stomach depressed, similar to the depression of all other parts of the body from nausea. In this condition something that would stimulate the stomach, whether the stimulant action is caused by a small dose of ipecac, or by a teaspoonful of very slightly diluted whiskey or brandy, or by stimulation of a more or less irritant food, would act for good. This is doubtless the condition of the stomach in which Kolopinski's suggestions are valuable.

Underhill and Rand, judging from the results of urinary analyses that these patients were suffering from inanition, proposed to feed them largely on carbohydrate foods, so as to furnish sufficient energy-producing food to maintain a nutritive equilibrium. They administered broths made from cereals and containing lactose, and where the patient was unable to take food by the stomach even in small quantities, they employed a nutritive enema consisting of saline solution and dextrose or peptonized milk, or saline solution and dextrose, administered by the drop method into the colon, as described last week in this department, under the title of "Rectal Alimentation." Indeed, rectal alimentation is sometimes a necessary and often a very important factor in the treatment in severe cases. Patients requiring such treatment should of course be kept in bed, and the various details of the rest-cure should be carried out.

In some instances vaginal examination will reveal some local trouble which has an influence in keeping up the irritability of the stomach by reflex action. Among such local pathologic conditions are displacements of the uterus, tumors of the ovary, congestion and inflammation of the pelvic connective tissue, and erosion or ulceration of the cervix uteri. Correction of uterine displacement, treatment of congestion or inflammation by hot douches and application of glycerin tampons, and treatment by astringents of any erosion of the cervix which may exist, will often prove of great benefit to the patient.

An innumerable variety of medicines has been proposed for the relief of this condition, but only a few need to be kept in mind. The subcarbonate of bismuth, in 0.50 to 1 gram (7½ to 15 grain) doses, given on an empty stomach, is perhaps one of the best.

Oxalate of cerium is of no value, except as its crystals may irritate an anemic stomach and cause hyperemia and more gastric secretion, and therefore stop a depressant nausea. The doses recommended are too small. Cerium oxalate never can have the sedative action of bismuth, and if used in place of bismuth should be given in large doses; but the drug is obsolete, and should be dropped from the Pharmacopeia and from use.

The value of drop doses of wine of ipecac, given in a teaspoonful of water every half hour, in stopping this kind of nausea, has long been proved. This is not a *similia similibus curantur*, because it is a stimulant to a stomach that requires stimulation and not an irritant to a stomach that is inflamed. If ipecac is given in gastritis it will increase the nausea and vomiting. When the stomach is anemic and the circulation in it depressed, it will improve the condition.

The value of any digestive ferments, as pepsin, is very slight. If an essence of pepsin is of value, it is probably due to the stimulant action of the wine with which it is often combined, or to the action of the hydrochloric acid which is in the preparation.

But more useful than any of these drugs, in many instances, are various remedies which have a sedative action on the nervous system. Of these none is more useful than the bromid of sodium. Given in 15-grain doses at four-hour intervals, it will frequently, for a time at least, stop the vomiting. It is in cases in which the neurotic element is predominant that sedatives are especially useful. Patients of this character often are greatly benefited by the judicious application of suggestive treatment, combined, in the severest cases, with isolation and rest.

Finally, when the vomiting resists all other forms of treatment and when inanition is progressing to a probable fatal termination, the question of producing abortion arises. Occasionally this must be performed, but with a thorough study of the patient and careful consideration of all the factors concerned in the production of the vomiting, it will be found that such a radical course is rarely required. It should not be lightly undertaken, and should be decided on only after consultation with men of experience in the care of pregnant women.

Treatment of Leprosy in the Kalihi Hospital.—Superintendent Wayson of the Kalihi Hospital, Territory of Hawaii, in his annual report to the president of the board of health of that territory, says that he believes the majority of the lepers taken in the incipient stage can be cured as in the case of incipient tuberculosis. He reports a number of apparent cures and gives the method of treatment. Among the agents used internally is chaulmoogra oil, which he believes still has a prominent place in the treatment of leprosy. Sodium cacodylate and hexamethylenamin are also used. Elixir of iron, quinin and strychnin as a general tonic has done much to keep the patients in a healthy condition. Among the agents used for treating the local lesions, Wayson has found carbon-dioxid snow to be effective. He believes that the slow method of using carbon-dioxid snow pencils in incipient cases in which the lesions are circumscribed undoubtedly causes the death of the lepra bacilli and their absorption into the tissues produces a self-immunization or vaccine effect, affecting not only the local lesions in evidence but all other foci present. This is shown in the so-called abortive cases in which the ulnar nerves alone are affected, it being a purely local condition. Wayson reports a number of cases. In one case in which the lesion was on the foot, in addition to the constitutional treatment, the foot was amputated, thus removing all clinical evidence of the disease and the patient was enabled to return to work. In another case with the initial lesion on the right cheek about 1½ inches in diameter containing the bacillus, tuberculin was given, but this increased the trouble. Chaulmoogra oil and elixir of iron, quinin and strychnin were given and the local lesion treated with carbon-dioxid snow. This method was continued cautiously until the lesions entirely disappeared and the bacilli could no longer be found. An examination six months later still failed to reveal any clinical or bacteriologic evidence of the disease.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[*For other information see second page following reading matter*]

SATURDAY, JANUARY 20, 1912

IS UNIVERSAL VEGETARIANISM FEASIBLE?

The psychology of the vegetarian propaganda would furnish the chapters for an entertaining story. The flame of enthusiasm for its doctrines has been fanned by the most diverse motives. At one time it has been ethical considerations, at another, economic, sociologic or physiologic arguments which have been advanced in support of what is essentially a system of diet.

Considered from purely physiologic aspects, the exclusive use of food of plant origin has been objected to principally on three grounds: (1) a tendency toward poorer utilization of the nutrients contained in the vegetarian diet; (2) the "blandness" of such a dietetic regimen and its lack of desirable stimulating qualities; (3) the necessity of consuming a larger volume of food to furnish the requisite nutriment, i. e., its bulky character.[1] But none of these factors furnishes serious obstacles to nutritive success and at times each presents certain advantages. Modern vegetarianism has recognized some of the more objectionable features and has met the situation by a diversity of improvements which represent a real advance in modern food preparation. To-day no one can deny the possibility of adequate nutrition and the prolonged maintenance of health and vigor on a vegetarian diet.

To grant the safety of the vegetarian regimen, however, it is by no means necessary to admit its superiority. Herein the enthusiasts have often been led too far afield. The controversy now centers largely around the possible dangers of excesses in meat-eating; so that a convert has written that "for all practical intents and purposes a vegetarian is one who does not habitually make use of flesh foods in contradistinction to the habitual user."[2] In our judgment the relative merits of an *exclusive* animal or vegetable dietary give little occasion to assume a physiologic superiority of either.

In an interesting essay just published, Professor A. E. Taylor[3] of the University of Pennsylvania considers and dismisses three groups of motives for vegetarianism, those of gustatory taste, esthetic taste and physiologic opinion. At the present time, he says, "ethical vegetarianism alone remains to be considered. This is in its tenets and conclusions a logical system." "Is it susceptible of consistent, world-wide application?" he asks. "Is the production of plant albumin on the earth sufficient to meet the albumin needs of the earth's inhabitants? What transformations would result in the customs, industry and commerce of the world, in the sociology and economics of the nations?" The question, to be sure, is a purely academic one; there is no danger that the population of the world will ever become universally consistent on vegetarianism or any other subject. The academic logic of the situation is squarely met by Professor Taylor. Consistent ethical vegetarianism would not permit the killing of animals either for food or for the products of their bodies. Mankind would have to face the problem of clothing without the aid of leather and fur.

To dispense with these protective devices would be a task trivial in comparison with that of the food problem. Taylor's conclusions may be given in his own words: "Unhesitatingly it may be stated that the area of the earth's surface now under cultivation could not, with the present methods of agriculture, dependably produce enough plant albumin to meet the needs of the present population. . . . To meet these needs with plant albumin and dairy products the world's production of grains and legumins would need to be doubled at the least. It is quite certain that this could not, with the uttermost efforts of the world's population, be dependably accomplished at present. . . . The difficulties would not be technical, but human. To accomplish them the present intelligence of the human race, the dependable intelligence of the working race of mankind, would be wholly insufficient; the race has not attained to-day the scientific stature necessary to reach and pluck these fruits of knowledge. For the present, therefore, it is certain and beyond speculation that to place the human race on the basis of ethical vegetarianism would be to expose the race to the mercy of Nature, just as the vegetarian population of India is yearly at the mercy of the yield of grain." The ever-present conservation problem will not be downed in these days!

1. Cf. Caspari: Physiol. Studien über Vegetarismus; Bonn, 1905.
2. Buttner: A Fleshless Diet. F. A. Stokes Co., New York, 1910, p. 2.
3. Taylor: Is Vegetarianism Capable of World-Wide Application? Pop. Sc. Monthly, December, 1911, p. 587.

THE REPORTING OF CASES OF SICKNESS

Success in the prevention of communicable diseases depends primarily on knowledge of the occurrence of these diseases and their geographic distribution. In fact, without prompt reports of such cases, health authorities are powerless to institute rational measures for the protection of the health of communities. In addition, a complete system of sickness registration would be an invaluable aid in determining the relation of climate to disease, the influence of overcrowding, occupation and predominant diets on health, and the liability to sickness with the consequent economic losses occasioned thereby.

While of fundamental importance, the collection of morbidity reports of all preventable diseases has not been complete or entirely satisfactory in any country. Three methods of collecting sickness statistics have been proposed: enumeration, estimation and registration. The last is the only feasible one, and is made use of to collect those statistics that are now available in the United States.

In accordance with present provisions of law, the United States Public Health Service endeavors to collect and disseminate accurate information regarding the prevalence and geographic distribution throughout the world of plague, cholera, yellow fever, small-pox and certain other communicable diseases. The data from abroad are received through the Consular Service, those from the United States, through state and territorial health authorities. These latter are in turn dependent on local authorities, physicians and householders where the sickness occurs. On account of the numerous avenues from which such reports must come, and because of the dissimilarity in the laws under which they are collected in the several states, they have been neither complete nor uniform. In order to bring about greater uniformity, cooperation of all the agencies responsible for the collection of sickness reports is necessary. A first step in this direction is the assembling and comparison of the laws and regulations relating to the reporting of cases of sickness.

In a recent bulletin[1] Trask has presented a digest of these laws and regulations, and a copy of this publication should be in the hands of every health officer—city, county and state. In a work of this character, naturally, comparison is made of the requirements contained in the statutes and regulations rather than of the extent of their enforcement. Trask outlines briefly the health organization for the collection of morbidity reports in each state and the counties, cities and towns in the respective states. A list of the notifiable diseases in each state and territory is given in tabular form. Great variation appears to exist as to the number of diseases required to be reported. In some states, as Arkansas, no diseases appear to be reportable under state law or regulations, while in Pennsylvania, reports are required to be made of thirty-three diseases.

Since health authorities are responsible for the collection of these reports, there is contained in tabular form a statement of the provisions made for such authorities by state and territorial laws and regulations, and in a separate table, there is presented information as to who shall make reports, to whom they shall be made, and the time of making them.

Finally, special mention is made of certain features peculiar to the various state and territorial laws relating to the reporting of cases of sickness, and a complete compilation of all the laws on the subject is contained in an appendix.

1. Pub. Health Bull. 45, U. S. Public Health and Marine-Hospital Service.

In bringing together the above-mentioned laws and analyzing them and the regulations issued thereunder, Trask has performed an important service. It is made apparent that there should be greater uniformity in respect to the reporting of cases of sickness, and it would seem desirable for this purpose to adopt a model act that would be capable of enforcement in the different states and territories and thus to develop and enlarge a registration area for morbidity.

THE SEWAGE PROBLEM IN CHICAGO

There is truly no end to the making of sewerage systems. The Chicago Main Drainage Canal has been in operation only about eleven years and the authorities responsible for its successful maintenance are already facing a serious situation. It is well known that the present drainage channel protects but a part of the Chicago water-supply from sewage contamination and that the water intake opposite Sixty-Eighth Street and supplying the old Hyde Park district is exposed to pollution from the sewage of the rapidly growing Calumet region. To remedy this condition a second drainage canal to discharge into the main canal at Sag is now planned. Pending the construction of this canal the residents of the southeast section of Chicago are receiving at times a sewage-contaminated drinking-water. The recent recommendation of the chief engineer, Mr. George M. Wisner,[1] that calcium hypochlorite should be used to sterilize the water at the Sixty-Eighth Street crib deserves consideration.

It is further evident from the chief engineer's report that the completion of the Sag channel will by no means solve all the sewage disposal problems of Chicago. The increasing volume of sewage poured into the main channel has diminished the degree of dilution to a critical point. In the summer months it is found that practically all the dissolved oxygen in the canal water is exhausted, and a nuisance is imminent. The branches of the Chicago River are already overloaded and an offensive condition exists. Industrial wastes are being discharged into the river and its branches to an unprecedented extent and add to the burden of the canal. Extensive deposits of silt are taking place in the main channel. "At present there is a large deposit of sludge in the forebay of the power house [at Lockport], extending over two miles north to the controlling works and into the rock section."[1]

A feasible remedy proposed for this silting-up of the channel and the overloading of the canal water with sewage and manufacturing waste is the construction of settling basins of the Emscher type at various points and perhaps the installation of roughing filters. It seems highly desirable that the experiments now in progress in this direction by the sanitary district should be continued and amplified. The chief sources of con-

1. Wisner, George M.: Report, Oct. 12, 1911.

tamination with industrial wastes should be discovered and controlled. As much water as is allowable should be kept flowing through the canal at all times.

One measure of great importance, since it would not only relieve the sewerage system but would reduce municipal expenditure as well, is the restriction of water waste. At least one-half the water pumped into the water-mains in Chicago is wasted. Proper inspection of plumbing and increased use of meters are simple but effective remedies for this condition. It is a remarkable instance of municipal inefficiency that this well-known and easily preventable waste should be allowed to continue unchecked.

There is no doubt that the whole situation of water-supply and sewage disposal in Chicago needs careful and far-sighted planning. The state of Indiana as well as Illinois is concerned in the Calumet situation and the national government is likewise an interested party so far as the abstraction of water from the Great Lakes is concerned. There is no doubt that any solution of the problem will prove a costly one for the citizens of Chicago, and it is to be hoped that they will be committed to no project without careful preliminary experimentation and consultation with leading experts. Sixty-five million dollars have already been expended for sewage disposal in Chicago.

VERONAL POISONING

Since 1903, when Fischer and von Mering introduced diethyl-barbituric acid (veronal) as a promising example of a new type of hypnotic, it has become one of the most widely used drugs of its class. It is singular that there should until recently have been a paucity of reliable data regarding the pharmacologic action of a substance which unfortunately has already begun to find its way into the hands of the untutored layman. As in several other conspicuous instances in toxicology, so here the fatal outcome of the use of the drug has given the impetus to a more adequate study of the effects of veronal and its more soluble sodium salt (medinal, veronal sodium) on the organism.[1]

Although the response of veronal in permissible amounts is ordinarily quite satisfactory, the slow excretion of the drug[2] suggests an element of danger in a repetition of the dose within too brief intervals. In view of this circumstance and the added fact that its toxicity is, according to Gröber, greater than is commonly assumed, it seems advisable to guard most carefully against the indiscriminate sale of veronal and related derivatives and to sound a warning against unauthorized "repeat" prescriptions.

The conspicuous action of veronal which serves to elucidate its physiologic as well as its toxicologic effects is the lowering of blood-pressure through a peripheral paralysis of the blood-vessels. This change in the circulation and distribution of the blood is not due to any direct effect on the heart or the vasomotor center. According to Jacobj the relaxation of the capillary walls in the extreme cases is somewhat comparable to the vascular effects induced by arsenic, and serves to explain the syndrome of events attending the overdosage of veronal. These include a fall of temperature, altered irritability of the respiratory center consequent on the deficient blood-supply to the medulla, congestion of the abdominal viscera, along with the fall of pressure and the hypnotic phenomena. Plainly the use of liberal doses of veronal is contra-indicated, because of this depression of the circulation, in those cases in which existing conditions impede the return of blood to the heart and in which an insufficiency of the pulmonary circulation is at hand. Bearing in mind that veronal does not affect the heart musculature itself, the clinician must decide whether, in the face of hemorrhages, cardiac defects, peritoneal processes, and delicate abdominal vascular conditions such as may arise in typhoid, a dangerous impairment of the circulation is threatened by the use of a drug exhibiting the pharmacologic properties outlined.

The appropriate management of intoxications due to veronal is likewise indicated. The average lethal dose, 8 to 10 grams, demands treatment to counteract the inevitable venous congestion, especially in the abdominal area. Stimulation of the vasomotor center, the use of camphor and drugs of related vasomotor action, compression of the abdominal vessels, conservation of body temperature, and perhaps oxygen inhalation, are called for.

Finally, it is interesting to note that the very reactions which, in extreme form, determine the toxic symptoms may serve to explain the valued property exhibited by veronal in permitting a refreshing awakening akin to that following normal sleep. One may imagine a satisfactory restoration of the tissues attendant on a mild degree of vascular relaxation. In any event, a better understanding of the point of attack of a drug like veronal is certain to lead to more efficient therapy.

1. Gröber: Ueber Veronal, Biochem. Ztschr., 1911, xxxi, 1. Jacobj: Untersuchungen zur Pharmakologie des Veronals (three papers), Arch. f. exper. Path. u. Pharmakol., 1911, lxvi, 241.
2. Hoffmann, A.: Inaug. Diss., Giessen, 1906.

PASTEURIZATION OF MILK IN BOTTLES

While the opinions of physicians and health officers as to the value of the pasteurization of milk are not unanimous, yet it would seem that when properly carried out, it is an additional method of securing safety which cannot be disregarded; and it cannot be denied that it does have the effect of reducing infant mortality. According to Straus, who has published data regarding this matter, in Karlsruhe, in 1909, the death-rate among infants fed on raw milk was 17 per cent., while among babies supplied with pasteurized milk the mortality for the same year was 6.3 per cent. In New York City, in 1892, the death-rate of children under 5 years of age was

96.5 per thousand; in 1910, 45.8 per thousand. This reduction was coincident with the increase of the number of stations for the distribution of pasteurized milk and increase in the output of those stations. It is probable, however, that the general improvement of the milk-supply aside from pasteurization was to some extent responsible for this improvement.

The germs of typhoid fever, diphtheria, scarlet fever and other diseases are destroyed at pasteurization temperature. Much depends on the method of pasteurization, however, as it cannot be denied that even after pasteurization contamination is possible. A method, more effective than those hitherto employed, of pasteurizing the milk in bulk, has been recommended recently by North.[1] According to this plan milk is bottled and then pasteurized in the same manner as beer has been pasteurized for some time past. The bottles are placed in baskets and then carried by an endless chain through tanks of water, each tank having a higher temperature than the previous one. Gradually a temperature of 142 F. is reached. Here the bottles remain for from twenty to thirty minutes and after that are cooled. The bottles are now ready for delivery, further handling by which recontamination might occur being unnecessary.

Three years ago, Heinemann[2] recommended the use of bottles with narrow necks and caps fitting tightly over the outside of the neck. This type of bottle is the same as used for bottling beer. The objection raised to this style of bottles is chiefly the alleged difficulty in cleaning them. In breweries they are cleaned in machines in a perfectly satisfactory manner. North reports a series of experiments made with milk bottled in this style of bottles and carried through a pasteurization process in a brewery. Tests of the milk were made and compared with the results obtained by pasteurization in a holding machine and with the initial content in the raw milk with the following results: The average number of bacteria in six samples of raw milk was 3,426,000 per cubic centimeter. The number in the milk after having been pasteurized in a holding machine was 73,800, showing that 97.9 per cent of all bacteria had been destroyed. The number of bacteria in the milk pasteurized in bottles was 13,980, showing that 99.6 per cent. of all bacteria had been destroyed.

Pasteurizing milk in closed bottles offers two distinct advantages over methods in vogue at present. There is, in the first place, a material reduction in numbers of bacteria, this reduction being greater than the reduction obtained by the holding process. With a greater reduction of numbers of bacteria follows a greater reduction of the chances of pathogenic germs surviving. The second advantage—and this cannot be overestimated—is the assurance that recontamination cannot take place, as no handling of the milk is necessary after pasteurization, and protection against pathogenic bacteria is assured.

1. North, C. E.: Med. Rec., New York, July 15, 1911, p. 111.
2. Heinemann, P. G.: Sanitary Milk, Arch. Pediat., June, 1908.

MILK OF THYROIDECTOMIZED ANIMALS IN HYPERTHYROIDISM

Many attempts have been made in recent years to alleviate the symptoms of hyperthyroidism by the administration of the milk, serum or dried blood of animals deprived of the thyroid gland. The theory[1] underlying these attempts was that, after removal of the thyroid, toxic substances accumulate in the blood, or antibodies are formed, some of which pass into the milk, and which neutralize in some way the excess of thyroid secretion which is believed to be present in the blood in hyperthyroidism. The reports from the use of such preparations have not been very uniform, some being favorable, others negative. Perhaps the most favorable results reported followed the use of comparatively large amounts (a pint to two quarts daily) of the fresh milk of thyroidless goats.[2]

Hunt,[3] who had concluded from his experimental work that a milk diet had an effect antagonistic to the thyroid, suggested that in these cases it was the milk *per se* rather than the presence in it of antibodies which was responsible for the improvement noted. Recent experiments by Edmunds[4] and also by Trendelenburg[5] tend to show that after removal of the thyroid, toxic substances accumulate in the blood and milk, and that these have an action not antagonistic to thyroid, but one similar to that of thyroid itself. Thus Trendelenburg found the blood of thyroidectomized animals to give the acetonitril test (increased resistance to acetonitril of mice receiving thyroid). Hunt (whose observations have been confirmed by Ghedini and Wilson) had found that the blood in certain cases of hyperthyroidism gave this reaction; he attributed it to the presence in the blood of an excessive amount of thyroid secretion. Trendelenburg, on the other hand, attributed Hunt's results (the increased resistance to acetonitril of mice to which thyroid had been administered) to the thyroid having taken up some of the toxic substances which accumulate in larger amounts when the thyroid is removed. Hunt[6] suggested that Trendelenburg's results (acetonitril reaction with the blood of thyroidectomized animals) might be due to the presence in the blood of substances which aroused the thyroid of animals to which it was administered to increased activity. This suggestion is in harmony with the experimental results of Edmunds: Edmunds found that the administration of the milk of thyroidless goats to rats receiving thyroid hastened the death of the animals; an opposite result would be expected if such milk contained antithyroid bodies.

The practical outcome of the work of Trendelenburg and Edmunds is to show that the treatment of hyper-

1. See New and Nonofficial Remedies, 1911, p. 30.
2. Edmunds: Lancet, London, Dec. 9, 1911, p. 1618.
3. Hunt, Reid: Bull. 69, Hyg. Lab., p. 75.
4. Edmunds: Lancet, London, March 4, 1911, p. 583.
5. Trendelenburg: Biochem. Ztschr., 1910, 29, p. 396.
6. Hunt, Reid: Experiments on the Relation of the Thyroid to Diet, THE JOURNAL A. M. A., Sept. 23, 1911, p. 1032.

thyroidism with "antithyroid" milk or blood does not rest on a satisfactory experimental basis. It also indicates that Hunt's suggestion that the favorable results obtained with the milk of thyroidless animals is due to the milk itself, and not to the presence in it of antibodies, may be the correct explanation. Further clinical observations on this subject are much to be desired.

Current Comment

THE AUTOMOBILE NUMBER

The Automobile Number of THE JOURNAL is a distinct annual feature, and we are pleased to find that physicians look forward to it with so much interest. The automobile has indeed become a regular part of the equipment of the physician. Every physician wants an automobile of some kind, if his practice requires any travel. The physician is very rare who does not either own a motor-car or look forward to owning one at some time in the future. It is no longer necessary, therefore, to discuss whether or not a physician should have an automobile. The question has changed its form: What sort of a machine should he have? How can he get the most out of it? How can he best care for it? Physicians also are interested in the experiences of their colleagues in business and in pleasure, while making tours as well as in the daily calls. They will be interested to know of new and clever devices for taking care of the automobile, for equipping it, for making it serve the physician's needs more acceptably. On all these points we shall be interested to receive communications. April 6 has been selected as the date of the Automobile Number, and we should like to have an early response from all who have something to contribute. We shall be glad to hear from contributors by February 5, that we may save space for them; and the articles should follow along during the month of February. As usual, pictures are in high demand; not ordinary pictures of the machine, but photographs with some character to them, showing an interesting incident, a good road or a bad road, the physician's house and family, his garage or repair outfit—in short, anything that will be of interest and help to the many who are eagerly awaiting the next Automobile Number. We should also like to receive suggestions from our readers with reference to any special points or features that they would like to see brought out.

THE PROFESSION MUST APPLY THE PENALTY

A law that provides no penalties for its violation is worthless; in fact, it is worse than worthless, for not only is the law itself inefficacious, but the impunity with which it may be violated creates disrespect for all law. The federal and various state food and drugs acts would be dead letters, if no punishment were prescribed for their violation. It is true that sometimes a law may become a dead letter because it is not enforced rather than because it carries with it no adequate penalty for being broken. Here, however, the fault lies not with the legislative, but with the executive department of the government. The various pure food laws of the country have accomplished good because drug adulterators and food sophisticators have found it either inconvenient or expensive to violate these laws. The efforts of the Council on Pharmacy and Chemistry to protect the medical profession against frauds and misrepresentation in proprietary medicines are rendered largely abortive because the Council is purely an advisory body and its findings do not result in the penalizing of the concern found guilty of fraud or misrepresentation. While the Council on Pharmacy and Chemistry has no power to punish those whom it shows to be guilty of deceit or dishonesty toward physicians, the medical profession itself has the power of inflicting the most severe penalty on such manufacturers. All that the Council can do is to exclude such products from New and Nonofficial Remedies and to expose their shortcomings through the pages of THE JOURNAL. This, in itself, means little to the manufacturers. It would mean a great deal, however, if physicians would confine their proprietary prescribing to such preparations as had been admitted to New and Nonofficial Remedies; it would mean a great deal if physicians would write to those medical journals that advertise the very preparations the Council has shown to be worthless, fraudulent, or both, urging—nay, even demanding—that the publishers purge their advertising pages of these products. Only in this way can the work of the Council be made effective; and it is for this reason that we have again taken up this propaganda for reform as it relates to so-called "ethical" proprietaries. We have decided to continue pounding away on this matter until we learn whether or not the profession is sufficiently interested to make some sacrifices—if sacrifices be necessary, as they may be in some instances. It is useless to go on with this propaganda unless the medical profession is backing it, and backing it in earnest. So long as nearly all medical journals, without protest from physicians, help to humbug the profession by admitting frauds to their advertising pages, so long will frauds and misrepresentations connected with the exploitation of proprietary medicines continue.

MEDICAL JOURNALS AND NOSTRUM EXPLOITATION

The 250 or 300 so-called independent medical journals published in the United States may be broadly divided into two classes: first, those whose subscription price is sufficient to warrant physicians to expect them to be run in the interest of the profession, and second, those whose subscription price is merely nominal and whose real support comes from the advertisers rather than from the subscribers. Of the first class there are not many and we shall discuss them at some length in the future. The name of the second class is legion. The term "independent," as applied to medical journals of the latter class, is misleading. Such journals, it is true, are independent of the medical profession, but they are subserviently dependent on the manufacturers of proprietary remedies whose advertising appropriations support them. The result is that such journals are commercial publications. They are published with one object in view, that of making money for their publishers—a perfectly legitimate object, but one that is prone to

result in relegating purely professional questions to the background. It is natural and even inevitable that under such conditions professional responsibility should bow to commercial expediency. It cannot easily be otherwise. It is therefore useless and absurd to expect that there should be any scientific discussion either of the proprietary remedies that are advertised in such journals or of the proprietary remedies of which such journals may hope to obtain advertisements. The editors of such journals will not kill the geese that lay their golden eggs. And why should physicians who encourage such journals expect things to be otherwise? They—the physicians—are not supporting these journals (be it remembered we are referring to the second class)—the proprietary manufacturers are doing so; all of which is merely another way of saying what we have stated repeatedly—that the perpetuation of the proprietary evil rests primarily on the shoulders of the profession. So long as physicians will shirk their responsibilities in the matter, so long will the evil flourish.

BENZOATE OF SODA—A CORRECTION

Two months ago[1] an editorial appeared in THE JOURNAL discussing the "Expert Opinion of the Royal Scientific Deputation for Medical Affairs Regarding the Use of Benzoic Acid and Its Salts for the Preservation of Food," a translation of which was sent to Washington by the American Consulate General of Berlin. From a reading of the report, we were led to make the following statement:

> "Of the decision of the United States referee board these German scientists say:
>
> "'The series of experiments in this connection made by the American scientists are of too short a duration and the results coupled with certain limitations so that they cannot be regarded as demonstrating the unconditional non-injurious nature.'"

Soon after this statement appeared, we received protests to the effect that the "series of experiments" referred to in the report was not the whole series conducted by the referee board, but only that series carried out to determine the effect of *large* doses of sodium benzoate. We called editorial attention[2] to this protest and published the entire paragraph so that our readers could determine for themselves whether or not we were justified in making our statements. At the same time, we wrote to the members of the Royal Scientific Deputation for Medical Affairs asking for further information on the point raised. The following letter is the answer to our inquiry:

"Auf Ihre Anfrage vom 21. November teile ich Ihnen zugleich im Namen und Auftrag von Herrn Dr. Abel folgendes mit. Unsere Bemerkung: 'Die in dieser Beziehung vorliegenden Versuchsreihen der amerikanischen Gelehrten sind von su kurzer Ausdehnung und die Ergebnisse mit gewissen Einschränkungen versehen pp.' bezieht sich *ausschliesslich* auf die Versuche mit *grossen* Mengen von Natriumbenzoat. Die Ergebnisse der Versuche des 'referee Board' haben wir im übrigen als beweisend für die Unschädlichkeit *kleiner* Mengen von Natriumbenzoat anerkannt. Das zeigt deutlich der folgende Satz des Gutachtens: 'Man darf—aus den Versuchen der amerikanischen Kommission wohl den Schluss ziehen, dass Mengen bis zu etwa 0. 5 g. Benzoesäure in kleinen Mengen tagsüber genossen, für den menschlichen Körper als harmlos zu bezeichnen sind.'

"Gestatten Sie mir zum Schluss, Sie auf einen kleinen Irrtum in Ihrem Artikel aufmerksam zu machen. Das Gutachten wurde erstattet auf Veranlassung des *preussischen*, nicht des deutschen Ministers der Unterrichts—und Medizinal-Angelegenheiten."

"Mit vorzüglicher Hochachtung

"DR. ARTHUR HEFFTER."

It will be seen by the above[3] that we were not justified in concluding that the criticism of the Royal Scientific Deputation for Medical Affairs referred to the whole of the work done by the referee board. THE JOURNAL has no desire to be unfair in any comments it may make on the benzoate of soda controversy and it regrets the error that was made in this particular. At the same time we believe that the attitude of the American Medical Association on the question of the use of sodium benzoate in food is the correct one, and we shall continue to protest against the use of this chemical as a food preservative. And we again call attention to the fact that while the Prussian scientists accepted, at their face value, the findings of the referee board, they reached the following conclusion in their own report:

> "The Scientific Deputation for Medical Affairs is likewise of the opinion that the use of benzoic acid and benzoic acid salts for the preservation of food should not be permitted."

And when all is said and done this, of course, is the nub of the whole question.

COUNTY MEDICAL SOCIETY LIBRARIES

In a paper read before the State Medical Society of Pennsylvania, James M. Anders[1] advocates a movement having for its aim the organization of working medical libraries for county societies. He believes that the erection of an independent library under suitable regulations for each county medical society would add materially to the higher culture and efficiency of the medical profession and would soon be counted among its most valuable educational resources. Here and there county societies have libraries, but, as a rule, except in the larger cities, they are not well kept up and not much interest is taken in them by the members. Anders believes that more interest should be stirred up in this library question and that the members should be encouraged to make use of the books and periodicals which the library should contain. A special assessment or an apportionment of the dues of the county society should be devoted to keeping the library up to date, and, as in the case of the larger medical libraries, donations of complete private

1. THE JOURNAL A. M. A., Nov. 4, 1911.
2. THE JOURNAL A. M. A., Nov. 25, 1911.

3. TRANSLATION: At your request of November 21, I make the following communication in the name and at the instance of Dr. Abel: Our remark, "The series of researches in this connection of the American scientists are too slight in extent and the results subject to certain limitations," refers *exclusively* to the experiments with *large* quantities of sodium benzoate. The results of the experiments of the referee board in other respects we have recognized as evidence for the innocuousness of small quantities of sodium benzoate. This is clearly shown by the following sentence of the report: "One may draw the conclusion from the experiments of the American commission that quantities up to about 0.5 gm. of benzoic acid taken in small quantities through the day are to be regarded as harmless for the human body." Kindly permit me to call your attention to a slight error in your article. The report was furnished at the request of the *Prussian* and not of the German (imperial) minister of instruction and medical affairs.

1. Anders, J. M.: The Value of a Library to a County Medical Society, Pennsylvania Med. Jour., November, 1911; abstr. in THE JOURNAL, Dec. 23, 1911, p. 2107.

libraries or of books by the members should be encouraged. At present, the secretaries of the county societies take care of these libraries without compensation, which is not conducive to the best usefulness of the libraries. The accumulation of books and current periodicals by the county societies would give many physicians an opportunity for a much wider range of reading than they can now afford, and this would undoubtedly be an important feature which would aid in creating and maintaining a greater interest in county medical societies, which of course would be most desirable. The county library idea should by all means be fostered and the members encouraged to make use of the collection.

THE LEAVEN WORKS

For the past two years THE JOURNAL has been stating some facts regarding certain fraudulent "patent medicines", quacks and quack institutions, and the Chemical Laboratory of the Association has been doing some splendid work in exposing the nostrums which are being advertised to the public. Of course, THE JOURNAL itself does not go to the lay public, but the various exposés are reprinted in pamphlet form[1] and are circulated among the laity and are also sent out to more than two thousand newspapers. It is an encouraging fact that we are getting the cooperation of many laymen all over the country; in fact, this help has been forthcoming almost from the very beginning—our correspondence with laymen has developed to such an extent that it requires practically the time of one stenographer to attend to it. A good example of the work that is being done by the laity in fighting the "patent medicine" evil is worth calling attention to. The readers of THE JOURNAL will remember the exposé published some months ago of a consumption cure fraud called Tuberclecide.[2] This nostrum has been exploited extensively in Albuquerque, New Mexico. One of the citizens of that town—a layman—wrote to THE JOURNAL for such information on this nostrum as it could furnish, and as a result of what he learned he has made things very interesting for the Tuberclecide exploiters. This gentleman has interested others and together they are seeing to it that the people of his community shall be enlightened. Here is what the Albuquerque *Morning Herald* says in reference to it:

"The public-spirited gentlemen who are now posting standard works endorsed by the American Medical Association in various public places in Albuquerque, to enlighten the credulous public on the nature of the various 'cures' and nostrums now in vogue, deserve the gratitude of the people. This is an educational crusade almost as important as the other one started here to teach the boys and girls about the prevention of tuberculosis. 'The Great American Fraud,' as Mr. Adams has so aptly termed it, will soon be able to see its finish and thousands of dollars now being donated by the gullible ailing to cold-blooded sharps who play on their apprehensions will be spent to better purpose. War on the fake dopes is war in the interest of the stomachs, health and lives of our people and such a crusade deserves the support of every one. At least it is worth the public's while to read these little books now being distributed about the city."

1. See THE JOURNAL, Jan. 13, 1912, advertising page 45.
2. THE JOURNAL, May 13, 1911; reprinted in "Nostrums and Quackery"

What has been done in this instance is no more than can be—and, we believe, will be—done in others. The number of intelligent laymen who are convinced of the viciousness of the "patent medicine" evil is rapidly increasing. All that is necessary is to furnish the facts and the public may be relied on to respond enthusiastically. Moreover, newspapers of the better sort will do as the Albuquerque *Morning Herald* and many other newspapers have done—cooperate in this campaign of education and help the good work along.

HENRY LABOUCHERE—THE FOE OF FRAUD

Henry Labouchere has just died in Florence, Italy, at the age of eighty. This announcement will be of no special medical interest, except to those who know what Mr. Labouchere, as editor of London *Truth*, has been doing for nearly forty years in exposing frauds in Great Britain. For years before the medical profession of England commenced its fight on nostrums, *Truth* had consistently and persistently enlightened the British public on "patent-medicine" frauds and swindling quacks. Mr. Labouchere has undoubtedly been sued for libel more than any half-dozen other men in the British Isles, and yet in practically every instance he has been upheld by the courts. This record is the more surprising in view of the limitations which the libel laws of Great Britain place on editors and publishers. It has been said that *Truth* has "unmasked all sorts of swindles with a cold-blooded precision of detail and never got indignant; it served the cause of virtue and public probity without uttering a virtuous sentiment." Undoubtedly the fight against nostrums and quackery commenced by Mr. Labouchere will be kept up by those who now conduct *Truth*.

WHICH WILL BE NEXT?

Two weeks ago, we noted in the Propaganda for Reform department that one of the high-class surgical journals of the country—*Surgery, Gynecology and Obstetrics*—had notified its subscribers that, commencing with the January, 1912, issue, it would advertise no pharmaceutical products that had not been approved by the Council on Pharmacy and Chemistry. The January issue is out and it is a credit not only to its publishers but to the surgical profession of the United States. This makes three independent medical journals—*Surgery, Gynecology and Obstetrics, Southern Medical Journal, Cleveland Medical Journal*—which have adopted the advertising standard set by the American Medical Association through its Council on Pharmacy and Chemistry. Which will be next?

Trained Nurses in China.—The field of trained nursing in China is limited to the foreign population, and the situation in Shanghai is typical of the whole country. In Shanghai, girls, mostly English, enter the Victoria Nursing Home for training while those in the Shanghai General Hospital are practically all French nuns. Among the Chinese the missionaries in the majority of the cases oversee the native hospitals and look after the sick. The outlook for an American nurse, reports Consul-General A. P. Wilder in *Daily Consular and Trade Reports*, is not bright unless she has a contract for two or three years before she leaves for China.

Medical News

ALABAMA

Antituberculosis Association Formed.—At a mass meeting of the citizens of Tuscaloosa, December 14, the Tuscaloosa County Antituberculosis Association was organized and John Y. Graham was elected president and Dr. James T. Searcy a director.

Tuberculosis Hospital for Convicts.—Contracts have been let by the state convict department for the erection of a tuberculosis hospital at Wetumpka, to accommodate at least ninety patients. The buildings are to be erected within a mile of the courthouse at Wetumpka, on a high hill thickly covered by pine trees.

Personal.—Dr. Hamilton R. Coston, Birmingham, fractured his arm while cranking his automobile, December 5.——Drs. George A. Hogan, Birmingham, and John T. Kent, Ensley, have been appointed state convict physicians, vice Drs. Sidney J. Vann, Fort Payne, and Elbert T. Fields, Ensley.——Dr. Harry T. Inge, Mobile, has been appointed chief surgeon of the Mobile and Ohio Railroad Company, vice Dr. Rhett Goode, Mobile, deceased.——Dr. William G. Ward, Mobile, has been appointed acting chief surgeon of the New Orleans, Mobile and Chicago Railroad.——Dr. Herbert P. Cole, Mobile, has succeeded the late Dr. Rhett Goode as surgeon of the Mobile-Selma division of the Southern Railway.——Dr. Harry T. Lay, Montgomery, has been appointed sanitary inspector of the Alabama Brigade, with the rank of major.

CALIFORNIA

Campaign Against Rats.—At the request of Health Officer Langdon of Stockton, Inspector Kuhn, U. S. P. H. and M.-H. Service, has opened headquarters in Stockton and will conduct a campaign against rats.

Personal.—Dr. Charles E. Ide has been appointed health commissioner of Redlands, vice Dr. Hamilton Forline, resigned.——Drs. Thomas W. Huntington and George D. Somers have been seated as members of the San Francisco Health Board. Dr. R. G. Broderick was elected president of the board, vice Dr. William F. McNutt, December 19.——Dr. Richard Fricks, Oakland, has returned from Europe.——Dr. Alden M. Gardner, Belmont, who has been seriously ill in the Lane Hospital, San Francisco, is reported to be convalescent.——Dr. Henry D. Buckman, Sacramento, has been appointed assistant superintendent of the Sacramento County Hospital.

Society Elections.—County medical societies report the following as the results of recent elections: Kern County, at Bakersfield, December 18: president, Dr. Thaddeus M. McNamara, San Francisco; vice-president, Dr. Newbern N. Brown, Bakersfield, and secretary-treasurer, Dr. Francis A. Hamlin, San Francisco.——San Bernardino County, at Redlands, December 13: president, Dr. Christopher A. Sanborn, Redlands; vice-presidents, Drs. Roy S. Gibbs, San Bernardino, and Daniel C. Stillians, Redlands; secretary, Dr. Carlos G. Hillyard, Redlands, and treasurer, Dr. William A. Taltervall, Redlands.——Butte County, at Chico, December 12: president, Dr. Charles L. Browning, Chico; vice-president, Dr. Edw. E. Baumeister, Chico, and secretary-treasurer, Dr. Ella F. Gatchell, Chico.——Riverside County, at Riverside, December 11: president, Dr. Karl R. Sleeper, Riverside; vice-president, Dr. Lewis H. Clark, Riverside, and secretary-treasurer, Dr. George E. Tucker, Riverside.

COLORADO

Personal.—Dr. Willis G. Mudd has been reelected as police surgeon of Denver.——Dr. Noah Dymenberg, Brush, has purchased the Mortensen property, and will remodel the building and move the Brush Hospital to it.——Dr. John G. Wolf has been elected city physician of Pueblo.

Sanatorium Incorporated.—The Fort Collins Sanitarium Company was incorporated, December 13. It will be under the charge of Dr. Emanuel Stuver and has the approval and cooperation of the medical profession of Fort Collins.

Elections.—At the annual meeting of the Colorado Woman's State Medical Society, Dr. N. Eugenia Barney, Sterling, was elected president, and Dr. Kate E. G. Yount, Denver, secretary-treasurer.——El Paso County Medical Society elected Dr. Burton B. Grover, president; Dr. Beverly Tucker, vice-president; Dr. James H. Brown, secretary, and Dr. George H. Grimmell, treasurer, all of Colorado Springs.——Morgan County Medical Society elected the following: president, Dr. William E. Turner, Brush; vice-presidents, Drs. John C. Law and Frederick W. Lockwood; secretary-treasurer, Dr. Ernest A. Fetherstone, all of Fort Morgan.

ILLINOIS

Medical Science Room Opened.—The medical science room of the Evanston Public Library was formally opened and presented to the library by the donors, January 3. The room was founded in honor of Dr. Edward H. Webster and contains the Walter S. Christopher library, endowed; the physicians' collection, donated; the Sarah H. Brayton collection, donated, and the Edward H. Webster library, endowed. The library contains about 600 volumes and in addition twenty-six medical periodicals. The presentation address was made by Dr. Will Walter, trustee.

Personal.—Dr. Charles H. McElfresh, Springfield, was assaulted and robbed in Chicago, January 7.——Dr. Cornelius J. Donovan, Waynesville, overcome by cold while making a call January 8, fell from his buggy and is reported to be in serious condition.——Dr. Franklin S. Davis, Peoria, fractured his right arm while cranking his automobile, January 4.——Dr. Paschall N. Bowman, Gillespie, is reported to be seriously ill with typhoid fever.——Dr. William H. C. Smith, Godfrey, started on a trip to Panama, January 16.——Dr. Clarence E. Pierce, O'Fallon, suffered severe bruises in a runaway accident December 29.

Elections.—The following officers of medical societies have recently been elected: Aurora Medical Association, December 27, president, Dr. Darwin D. Culver; vice-president, Adam E. Diller, and secretary and treasurer, Dr. G. B. Schwatgen.——Perry County Medical Association, at Tamaroa, in December, president, Dr. Max Adles, Duquoin; vice-presidents, Drs. James T. Leigh, Duquoin; James S. Cleland, Swanick; James W. Smith, Cutler, and Thomas A. Holeman, Rice, and secretary-treasurer, Dr. Frank P. Gillis, Duquoin.——Morgan County Medical Society, at Jacksonville, president, Dr. Edward Bowe; vice-president, Dr. George H. Stacy; secretary, Dr. Walter L. Treadway, Concord, and treasurer, Dr. Albyn L. Adams, all of Jacksonville.——Alexander County Medical Society, at Cairo, December 21, president, Dr. Josiah B. Hibbetts; vice-president, Dr. Flint Bondurant, and secretary and treasurer, Dr. James W. Dunn (reelected), all of Cairo.——Marion County Medical Society, at Centralia, December 21, president, Dr. Joshua T. Jones, Salem; vice-president, Dr. Samuel E. Peden, Centralia, and secretary and treasurer, Dr. Warren W. Murfin, Patoka.——Adams County Medical Society, recently, president, Dr. James H. Pittman, Camp Point; vice-presidents, Drs. Ray Mercer, Loraine, and Kirk S. Shawgo, Quincy; secretary, Dr. Elizabeth B. Ball, Quincy, and treasurer, Dr. Robert J. Christie, Quincy.——Whiteside County Medical Association, at Morrison, president, Dr. William K. Farley, Fulton; vice-president, Dr. Edward W. Wahl, Tampico, and secretary-treasurer, Dr. William H. Perry, Sterling.

INDIANA

Sanatorium to Be Enlarged.—A tract of land, 170 by 301 feet, adjoining the Norways Sanitarium, Indianapolis, has been purchased by Dr. Albert E. Sterne and others, for $10,200.

Kendallville Needs Hospital.—A meeting of physicians of Kendallville was held December 21 to discuss the needs of a hospital in the city. A free site, 105 by 480 feet, has been offered for the hospital and on this it is planned to erect a twelve-room building, at an approximate cost of $10,000.

New Dispensary Opened.—A dispensary for the worthy poor of the state has been opened at the Indiana University School of Medicine, Indianapolis. It will be in charge of Dr. Charles P. Emerson. Patients from Indianapolis will be cared for in the city dispensary, but those outside of the city will be sent to the state dispensary. A new laboratory for the teaching of operative surgery, experimental physiology, pathology and pharmacology, has been fitted up at the School of Medicine.

Diphtheria Cultures.—From a compilation made by Dr. J. P. Simonds, superintendent of the Laboratory of Hygiene of the State Board of Health, 2,452 cultures were made from diphtheria districts during the past year; 791 or 32 per cent. being found positive; more than one-half of the cases were in children of grammar school age and two-thirds of the total number were found in children old enough to attend grammar school or high school. The attendance at school was shown to materially affect the spread of the disease during the epidemic.

Medical Society Elections.—The following officers have recently been elected by the county medical societies: Daviess County, at Washington, December 9—president, Dr. George W. Williford; vice-president, Dr. Jacob W. Clark, and secretary-treasurer, Dr. Thomas F. Spink, all of Washington.——

Cass County, at Logansport, December 15—president, Dr. Joseph Rubsam, vice-president, Dr. John H. Reed, and secretary-treasurer, Dr. George D. Miller, all of Logansport.——Hamilton County, at Noblesville, December 13—president, Dr. Everett Rainey, Jolietville; vice-president, Dr. Albert R. Tucker, Noblesville, and secretary-treasurer, Dr. Julian E. Hanna, Noblesville.——Lake County, at Hammond, December 14—president, Dr. Edward E. Evans, Gary (reelected), and Dr. Eldridge M. Shanklin, Hammond, secretary.——Knox County, at Vincennes, December 12—president, Dr. Emory F. Small, Decker; vice-president, Dr. Henry W. Held, Vincennes, and secretary-treasurer, Dr. Hubert D. McCormick, Vincennes.——Shelby County, at Shelbyville—president, Dr. James E. Keeling, Waldron; vice-president, Dr. Franklin E. Ray, Shelbyville, and secretary-treasurer, Dr. Morris Drake, Shelbyville.——Tippecanoe County, at Lafayette, December 11—president, Dr. George F. Keiper; vice-president, Dr. William Marven Reser; secretary, Dr. Earl Van Reed, and treasurer, Dr. Charles Hupe, all of Lafayette.——Wayne County, at Richmond, December 6—president, Dr. William M. Helms, Williamsburg; vice-president, Dr. Robert R. Hopkins, Richmond; secretary, Dr. David W. Stevenson, Richmond (reelected), and treasurer, Dr. Frederick W. Krueger, Richmond (reelected).——Jay County, at Portland—president, Dr. Henry W. Markley, Pennville; vice-president, Dr. Clement Bockoven, Bryant, and secretary-treasurer, Dr. Milton T. Jay, Portland (reelected for the tenth term.——Adams County, at Decatur, December 8—president, Dr. Philip B. Thomas, Decatur; vice-president, Dr. Marion F. Parrish, Monroe, and secretary-treasurer, Dr. Claudius C. Rayl, Monroe (reelected).——Fort Wayne Medical Society, at its annual meeting, December 5, elected Dr. Ben Perley Weaver, president; Dr. Budd Van Sweringen, vice-president, and Dr. Garrett Van Sweringen, secretary.——Vanderburg County, at Evansville, December 28, president, Dr. Porter H. Linthicum; vice-president, Dr. Benoni S. Rose, and secretary-treasurer, Dr. William Ehrich, all of Evansville.——Johnson County, at Franklin, December 28, president, Dr. Daniel W. Sheek, Greenwood; vice-president, Dr. John N. Records, Franklin, and secretary and treasurer, Dr. Rufus W. Terhune, Whiteland.——Madison County, at Anderson, December 26, president, Dr. Franklin F. Mendenhall, Elmwood; vice-president, Dr. Doris Meister, Anderson, and secretary-treasurer, Dr. Stanley C. Newlin, Anderson.——Steuben County, at Angola, December 22, president, Dr. Robert L. Wade, Fremont (reelected), and secretary-treasurer, Dr. Thomas J. Creel, Angola (reelected).——Dubois County, at Huntingburg, December 19, president, Dr. James P. Salb, Jasper; vice-president, Dr. Louis C. Lukemeyer, Huntingburg, and secretary and treasurer, Dr. Christian R. Ramsbrok, Huntingburg.——Jackson County, at Seymour, December 22, president, Dr. James H. Carter, Seymour; vice-president, Dr. Nelson G. Harrod, Tampioca, and secretary and treasurer, Dr. L. Butler Hill, Seymour.——Clay County, at Brazil, December 21, president, Dr. Felix G. Thornton, Knightsville; vice-president, Dr. William Palm, Harmony; and secretary-treasurer, Dr. Harry Elliott, Brazil.——Hancock County, at Greenfield, December 14, president, Dr. Milo Gibbs, Greenfield; vice-president, Dr. Stuart Slocum, Fortville; secretary and treasurer, Dr. Carl W. McGaughey, Greenfield.——Montgomery County, at Crawfordsville, December 19, president, Dr. Paul J. Barcus, Crawfordsville; vice-president, Dr. Kent K. Straughan, Waveland; and secretary-treasurer, Dr. James L. Beatty, Crawfordsville.——Wells County at Bluffton, December 19, president, Dr. Roy E. DeWeese, Keystone; vice-presidents, Drs. Clarence H. Mead, Bluffton, and Edwin W. Dyer, Ossian; secretary, Dr. Samuel A. Shoemaker, Poneto (reelected), and treasurer, Dr. Leonidas Mason, Bluffton (reelected).——Bartholomew County, at Columbus, recently, president, Dr. Alva M. Kirkpatrick; vice-president, Dr. Samuel M. Voris; secretary and treasurer, Dr. Paul C. Graham, all of Columbus.

IOWA

Personal.—Drs. Nicholas Schilling, New Hampton, and Thomas B. Charlton, Clinton, have returned from Europe.——Dr. B. Luther Stevens, Des Moines, is about to leave that city and will establish a sanatorium for tuberculosis in Florida.——Dr. E. Warren Doolittle, Garden Grove, who has been in ill health for several years, has resumed medical practice at Weldon.

New Society Organized.—At a meeting held at Calmar, the Northeastern Iowa Medical Society was organized, its membership being taken from the physicians of Allamakee, Winneshiek, Howard, Chickasaw, Fayette, Clayton and adjoining counties. The following officers were elected: president, Dr. Philo M. Jewell, Decorah; vice-president, Dr. Edwin N. Johnston, Fredericksburg; secretary-treasurer, Dr. William C. Hess, Cresco. The next meeting of the society will be held at Calmar, June 4.

New Officers for Societies.—The following new officers are reported by county societies: Pottawattamie County—president, Dr. N. Jasper Jones, Shelby; vice-president, Dr. Andrew A. Robertson, Crescent, and secretary-treasurer, Dr. Grant Augustine, Minden. Dubuque County—at Dubuque, January 9: President, Dr. William L. Becker, Dubuque; first vice-president, Dr. Thomas H. Hefferman, Dubuque; second vice-president, Dr. James E. Reeder, Dyersville; secretary, Dr. Mathias J. Moes, Dubuque, and treasurer, Dr. Anthony M. Loes, Dubuque. Hardin County—at Eldora, January 3: President, Dr. Charles C. Gethman, Eldora; vice-president, Dr. Bessie Garver, Iowa Falls; secretary, Dr. William E. Marsh, Eldora; treasurer, Dr. James W. Thornton, Ackley. Scott County—at Davenport, January 2: President, Dr. William L. Allen; vice-president, Dr. Peter H. Schroeder, and secretary-treasurer, Dr. John V. Littig, all of Davenport. Marion County—at Knoxville, December 14: President, Dr. Cornelius N. Bos, Pella; vice-president, Dr. Harry L. Bridgman, Columbia; secretary, Dr. Corwin W. Cornell, Knoxville. Page County—at Clarinda, December 21: President, Dr. Robert H. Sutton, Shenandoah; vice-president, Dr. Robert J. Mathews, Clarinda, and secretary-treasurer, Dr. Benjamin S. Barnes, Shenandoah. Lee County—at Fort Madison, December 27: President, Dr. William C. Kasten, Fort Madison; vice-president, Dr. Joseph M. Casey, Fort Madison, and secretary-treasurer, Dr. Ernest G. Wollenweber, Keokuk. Adams County—at Corning, December 19: President, Dr. Frank P. Amdor, Carbon; vice-president, Dr. Jay H. Wallahan, Corning, and secretary-treasurer, Dr. Charles H. Bryant, Corning. Taylor County—at Bedford, December 19: President, Dr. Henry F. Dunlavy, Bedford; vice-president, Dr. Theophilus W. Bennett, Lenox, and secretary, Dr. Clayton M. Paschal, Bedford. Polk County—at Des Moines, December 19: President, Dr. Walter L. Bierring; vice-president, Dr. James W. Osborne; secretary, Dr. Nellie S. Noble, all of Des Moines. Muscatine County—at Muscatine, December 15: President, Dr. Frederick H. Little, Muscatine; vice-presidents, Drs. Gustave A. Heidel, Muscatine, and Harry H. English, Conesville, and secretary-treasurer, Dr. William H. Johnston, Muscatine. Clay County—at Greenville, December 13: President, Dr. John B. Wertz, Spencer; vice-president, Dr. Porter-Wertz, Spencer, and secretary, Dr. Greeley B. Snyder, Everly. Mills County—at Malvern, December 14: President, Dr. Edgar Christy, Hastings; vice-president, Dr. James R. Scott, Malvern; secretary-treasurer, Dr. James M. Donelan, Glenwood.

KENTUCKY

New State Board Members.—The governor has appointed three new members of the state board of health: Dr. Isaac H. Shirley, Winchester, succeeding Dr. Joseph M. Mathews, Louisville; Dr. William W. Richmond, Clinton, succeeding Dr. William A. Quinn, Henderson, and Dr. George T. Fuller, Mayfield, succeeding Dr. James C. Mitchell, Louisville. The appointments have subsequently been confirmed by the senate.

Personal.—Dr. William B. McClure, Lexington, while crossing the railway tracks in his automobile, was struck by a train and his automobile demolished, but he, fortunately, was uninjured.——Dr. J. L. Goll has been elected city physician, and Dr. Gustavus D. Lillard, health officer of Lawrenceburg.——Dr. John W. Harned has been elected health officer of Hopkinsville.——Dr. Dunning S. Wilson, Louisville, has been elected medical director of the Waverly Hills and Hazelwood Antituberculosis Hospitals.——Dr. Benjamin Carlos Frazier, Louisville, has been elected physician to the Kentucky Institute for the Blind, vice Dr. William Bailey, deceased.

County Board Report.—The annual report of the Jefferson County Board of Health prepared by Dr. Benjamin W. Smock, Louisville, contains some interesting statistics. Enforcement of the vital statistics law has made possible a more complete report than usual. There are thirty-two registrars serving in the county outside of Louisville. There were 695 births and 464 deaths in the county outside of Louisville. Three hundred and seventy-one cases of tuberculosis were reported with seventy-seven deaths. Since the installation of the new filter plant, typhoid among those using the water has decreased 50 per cent. A number of public wells found to contain typhoid bacilli have been closed by the health officer. The decrease in the number of cases of contagious diseases is believed to be due to the efficiency of the fumigation of schools.

Three cases of pellagra, all fatal, occurred. In each instance the victim was a resident of the southeastern section of the county and an inmate of Central Hospital for the Insane, Lakeland. The State Board of Health and the representatives of the Marine Hospital staff are working in that section to determine the cause if possible. Dr. Smock severely criticizes the slaughter houses in the county and urges the enactment of laws making necessary the establishment of a public abattoir. The board has been unusually active in the investigation of milk and dairies, and fifty dairymen have been fined on various charges brought by the board. It was shown that nearly $77,000,000 had been spent to improve the sewerage system in the county and the system is now nearing completion.

MARYLAND

Hospital to be Abolished.—The old government hospital at West Annapolis, which was erected by the federal government shortly after the Civil War, at a cost of more than $200,000, has been condemned and is to be razed.

Urges Prohibition of Marriage of Defectives.—Dr. Frank W. Keating, superintendent of the Maryland Asylum and Training School for Feeble-Minded, Owings Mills, in his annual report emphasizes the necessity of enacting laws prohibiting the marriage of mental defectives. Restrictions, together with segregation and permanent custody in proper institutions of existing cases would, he believes, in a few years, check considerably the number of feeble-minded persons, which is at present increasing.

Sanatorium Completed.—The new building of the Maryland Tuberculosis Sanatorium, Sabillasville, which has been built and equipped at a cost of $200,000, is nearly completed and will be opened this month. The completion of this new building will more than double the capacity of the institution, which is at present 210. Since the opening of the sanatorium 600 patients have been treated, and there has always been a large waiting list, but this, it is believed, will be abolished on account of the increased capacity of the new building.

Elections.—The following results of elections of county medical societies are reported: Caroline County Medical Society, at Denton, December 21; president, Dr. Frederick R. Malone, Greensboro; vice-president, Dr. Humphrey W. B. Rowe, Hillsboro, and secretary-treasurer, Dr. John R. Downes, Preston. ——Calvert County Medical Society, at Prince Frederick, December 12; president, Dr. Isaac N. King, Bartown; vice-president, Dr. Oliver D. Simmons, Bowens, and secretary-treasurer, Dr. John W. Leitch, Huntingtown.——Dorchester County Medical Society, at Cambridge, December 12; president, Dr. Edward L. Jones, East Newmarket; vice-president, Dr. G. Roger Myers, Hurlock, and secretary, Dr. William H. Houston, Fishing Creek.

Baltimore

Work on Cancer Hospital Begins.—Work was begun January 4 on the new cancer hospital, which is to be established on the site of the old Atlantic Medical College.

Personal.—Dr. Robert A. Warner has been appointed superintendent of the Sydenham Hospital for Infectious Diseases, vice Dr. Warren P. Morrill, resigned.——Dr. James G. Wiltshire has been elected surgeon and Drs. Alexander T. Bell, Louis W. Knight and William L. Morgan have been elected assistant surgeons of the Isaac R. Trimble Camp, United Confederate Veterans.

MICHIGAN

Anniversary Meeting of County Society.—At the eighty-fourth anniversary exercises of the Washtenaw County Medical Society held at Ann Arbor, December 13, Dr. William Allen Pusey, Chicago, was the guest of honor and was given a dinner at the Michigan University Club House. He also gave a clinic in dermatology at the University Hospital and a lantern slide demonstration of some manifestations of skin disease.

Academy Holds Annual Meeting.—The annual meeting of the Kalamazoo Academy of Medicine was held December 14 and the following officers were elected: Dr. Orton H. Clark, Kalamazoo, president; Drs. Della P. Pierce, Kalamazoo; A. L. Robinson, Allegan; La Verne Rogers, Galesburg, vice-presidents, and Dr. Charles E. Boys, Kalamazoo, secretary and treasurer.

New Officers.—The following recent elections are reported: Menominee County Medical Society, at Menominee, December 14; president, Dr. Edward Sawbridge, Stephenson; vice-president, Dr. Benjamin T. Phillips, Menominee; secretary-treasurer, Dr. Henry T. Sethney, Menominee.——Kent County Medical Society, at Grand Rapids, December 13; president, Dr. Burton R. Corbus, Grand Rapids; vice-president, Dr. Otto C. McDannell, Lowell; secretary and treasurer, Dr. Frederick C. Warnshuis, Grand Rapids, and assistant secretary-treasurer, Dr. Ernest W. Dales, Grand Rapids.——Delta County Medical Society, at Escanaba, December 14; president, Dr. Michael P. Fenelon; vice-president, Dr. D. Arthur S. Kitchen, and secretary-treasurer, Dr. W. B. Boyce, all of Escanaba.——St. Clair County Medical Society, at Port Huron, December 14; president, Dr. Albert E. Thompson, St. Clair; vice-president, Dr. Albert L. Callery, Port Huron, and secretary-treasurer, Dr. Richard K. Wheeler, Port Huron.——Emmet County Medical Society, at Petoskey, December 13; president, Dr. Levi W. Gardner, Harbor Springs; vice-president, Dr. John J. Reycraft, Petoskey, and secretary-treasurer, Dr. George W. Nihart, Petoskey.——Lenawee County Medical Society, at Adrian, December 13; president, Dr. William B. Sprague, Palmyra; vice-president, Dr. Artemus W. Chase, Adrian, and secretary-treasurer, Dr. Isaac L. Spaulding, Hudson.——Bay County Medical Society, at Bay City, December 11; president, Dr. J. William Gustin; vice-president, Dr. Floyd H. Randall, and secretary-treasurer, Dr. Hubbard N. Bradley, all of Bay City.——Oakland County Medical Society, at Pontiac, December 7; president, Dr. Edmund A. Christian; vice-president, Dr. William McCarroll, and secretary and treasurer, Dr. Harvey S. Chapman, all of Pontiac.——Jackson County Medical Society, at Jackson, December 7; president, Dr. Peter Hyndman, Jackson; vice-president, Dr. Colin D. Munro; secretary, Dr. George Arthur Seybold, Jackson, and treasurer, Dr. Presca Isaac Edwards, Jackson. ——Eaton County Medical Society, at Olivet; president, Dr. James B. Bradley, Eaton Rapids; vice-president, Dr. Flavius J. Knight, Charlotte, and secretary and treasurer, Dr. Arthur H. Burleson, Olivet.——Ingham County Medical Society, at Mason; president, Dr. Bret Nottingham; vice-president, Dr. Samuel Osborn, and secretary-treasurer, Dr. Marinus L. Holm, all of Lansing.——Genesee County Medical Society, at Flint; president, Dr. Noah Bates; vice-president, Dr. Mark S. Knapp; secretary, Dr. Clifford P. Clarke, and treasurer, Dr. Frederick B. Miner, all of Flint.

MINNESOTA

Reappointments to State Board.—The governor has announced the following reappointments to the State Board of Health: Drs. Charles W. More, Eveleth; William A. Jones, Minneapolis, and Burton J. Merrill, Stillwater.

Branch Laboratory to Be Established.—At a meeting of the State Board of Health in St. Paul, January 9, the proposition to establish a branch laboratory in Mankato received favorable consideration. The laboratory is to be in charge of Dr. C. Pratt.

Appropriation for Sanatorium.—The commissioners of Fergus County, at their meeting in Fergus Falls, January 7, appropriated $8,000 for the erection of a county tuberculosis sanatorium and appointed a sanatorium committee to select a site and erect the first building. Dr. Otto M. Haugan, Fergus Falls, is chairman.

Personal.—Dr. Charles H. Mayo, Rochester, who was operated on twice for appendicitis in New York City, is convalescent and has returned to his home.——Dr. Ignatius G. Murphy has been appointed health officer of Duluth and Dr. Floyd F. Clark, Duluth, has been reappointed jail physician of St. Louis County.——Dr. Charles L. Scofield, Benson, has been appointed a member of the advisory commission on sanatorium for consumptives.

County Society Meetings.—Blue Earth County Medical Society held its annual meeting in Mankato, December 26, and elected Dr. Carl J. Holman, Mankato, president; Dr. Charles E. Bigelow, Madison Lake, vice-president; Dr. Jane C. Hughes, Mankato, secretary; Dr. Lida Osborn, Mankato, treasurer; Dr. Franklin J. Bomberger, Mapleton, censor; Dr. Adolph G. Liedloff, Mankato, delegate to the state association, and Dr. Jesse L. McBeth, St. Clair, alternate.——Goodhue County Medical Association, at its annual meeting January 2, elected Dr. John V. Anderson, president; Dr. Howard L. McKinstry, vice-president; Dr. Myron W. Smith, secretary-treasurer, and Dr. George C. Wellner, censor, all of Red Wing.

MISSISSIPPI

State Laboratory Report.—During the first year of the state bacteriologic laboratory at Jackson, 4186 examinations were made with positive findings, including seventy-three cases of diphtheria, 300 cases of tuberculosis, 266 cases of typhoid fever and 550 cases of hookworm disease.

State Board and State Association Petition Legislature.—Petitions are being sent to members of the legislature urging a more adequate appropriation to carry on the campaign of education on sanitation and hygiene and the dissemination of literature relative to preventable diseases; the creation of a bureau of vital statistics and a more adequate allowance to carry on the work of the state bacteriologic laboratory; recommending the passage of a bill advocated by the Mississippi State Medical Association providing for the registration of the vital statistics of the state, and the passage of a bill making a larger appropriation for the use of the State Board of Health.

Elections.—The Lauderdale County Medical Society met at Meridian, December 28, and elected Dr. Thomas J. Houston, president; Dr. Robert H. Foster, vice-president, and Dr. Thomas E. Royals, secretary and treasurer, all of Meridian.——Adams County Medical Association, at its annual meeting in Natchez, December 21, elected Dr. James C. French, president; Dr. M. C. Reeves, vice-president, and Dr. Jacob S. Ullman, secretary and treasurer, all of Natchez.——Scott County Medical Society met at Forest, recently, and elected Dr. Ellis J. Rowe, Hillsboro, president; Dr. Junius M. Townsend, Harperville, vice-president, and Dr. Wade H. Pevy, Forest, secretary-treasurer.——Physicians of Hinds and Warren counties met in Jackson, January 9 and organized the Central Mississippi Medical Society, which it is proposed will eventually include in its membership the physicians of Hinds, Warren, Yazoo and Rankin counties. The following officers were elected: president, Dr. Benjamin L. Cully, Jackson; vice-presidents, Drs. Walter B. Dobson, Jackson, for Hinds County, and Ewing F. Howard, Vicksburg, for Warren County, and secretary, Dr. John C. Cully, Jackson.—Clay-Lowndes-Oktibbeha County Medical Association at its annual meeting in Columbus, January 3, elected Dr. Walter R. McKinley, Columbus, president, and Dr. Charles E. Lehmberg, Artesia, secretary and treasurer.

MISSOURI

Hospital Day Fund Divided.—The Hospital Day Association of Kansas City raised $6,430 by the sale of tags, and divided it among eight hospitals.

Personal.—Dr. Louis J. Dandurant, St. Joseph, was thrown from his buggy and painfully injured, January 8.——Dr. Jacob Geiger, St. Joseph, was the guest of honor at the annual banquet of the St. Joseph-Buchanan-Andrews County Medical Society and was presented by Dr. Wallace B. Deffenbaugh, on behalf of the society, with a silver loving-cup.

Elections.—Officers have recently been elected in the following medical societies: Webster County, at Fordland, December 29, president, Dr. C. H. McHaffie, Rogersville; vice-president, Dr. David A. Williams, Niangua; secretary-treasurer, Dr. John R. Bruce, Marshfield; censor, Dr. William A. Atkins, Rogersville; delegate to the state association, Dr. Messer Highfill, Marshfield, and alternate, Dr. William J. Rabenau, Fordland.——Jasper County, president, Dr. Robert M. James, Joplin; vice-president, Dr. Jackson B. Taulbee, Joplin; secretary, Dr. A. Mitchell Gregg, Joplin, and treasurer, Dr. Mitchell C. Shelton, Joplin.——Pettis County, at Sedalia, president, Dr. Charles A. McNeil; vice-president, Dr. Albert J. Campbell, and secretary, Dr. W. A. Beckemeyer, all of Sedalia.——Carroll County, at Carrollton, December 18, president, Dr. Richard F. Cook, Carrollton; vice-president, Dr. Oliver R. Edmonds, Tina, and secretary-treasurer, Dr. Ethan E. Brunner, Carrollton.——St. Louis County, at Clayton, December 13, president, Dr. Claude L. Armstrong, Webster Groves; vice-president, Dr. Nicholas Jensen, Florissant, and secretary, Dr. John Armstrong, Kirkwood.——Nodaway County, at Maryville, December 12, president, Dr. Joel H. Todd, Maryville; vice-president, Dr. Frank M. Ryan, Quitman, and secretary-treasurer, Dr. Leslie E. Dean, Maryville.——Greene County, at Springfield, December 8, president, Dr. David U. Sherman; vice-president, Dr. Solomon W. Tickle; secretary, Dr. Thomas O. Klinger, and treasurer, Dr. Dexter B. Farnsworth, all of Springfield.

St. Louis

New Dispensary Opened.—The Sisters of St. Mary's Infirmary opened a free dispensary at 1507 Chouteau Avenue, Daily clinics will be held and the visiting staff is drawn from the faculty of the St. Louis University School of Medicine.

Funds to Hospitals.—The Hospital Saturday and Sunday Association mailed checks to fourteen hospitals December 24 for sums aggregating $43,142.20.——Adolphus Busch has given $1,000 to the St. Louis Society for the Relief and Prevention of Tuberculosis.

Personal.—Dr. Enno Sander is under treatment for cancer of the ear in St. Luke's Hospital.——Dr. Anselm C. Robinson, police surgeon, resigned January 5 and Dr. Harry M. Moore was appointed his successor.——Dr. Wayne Smith has been appointed superintendent of the St. Louis City Hospital and Dr. Charles E. Bauer, the former superintendent, has succeeded Dr. Smith as superintendent of the Washington University Hospital.——Dr. Emmett P. North has resigned as chief surgeon for the United Railways Company and has gone to Europe. Dr. Walter R. Hewitt is Dr. North's successor.

Endorse Crusade Against Quacks.—The St. Louis Medical Society has adopted resolutions upholding Health Commissioner Max C. Starkloff in his crusade against fake medical practitioners. The resolutions set forth that the Committee on Public Health and Legislation of the St. Louis Medical Society, recognizing the grave evils arising from the activity, in the community, of irregular practitioners, not only to individuals suffering from infectious diseases, but to others to whom these diseases may spread from their failure to report them to the proper authorities, recommends to the St. Louis Medical Society a strong endorsement and pledge of support to the health commissioner in his effort to control these practitioners.

NEW JERSEY

Donation Toward Preventorium.—John D. Rockefeller has subscribed $10,000 toward the new buildings of the tuberculosis preventorium for children, Farmingdale, contingent on $140,000 being collected from other sources. Of this sum $114,000 has been subscribed.

Sanatorium Nearing Completion.—The Belle Mead Farm Colony and Sanatorium is nearing completion and will be ready to receive patients about March 1. The institution is situated on a tract of land of more than 300 acres and has five buildings of modern construction and up-to-date equipment. The sanatorium is intended for mental and nervous patients, including alcohol and drug habitues. Dr. J. Joseph Kindred, Astoria, N. Y., is owner of the sanatorium and Dr. Edward Everett is physician in charge.

Sterilization of Criminals.—Governor Wilson has appointed a commission consisting of George O. Osborn, superintendent of the state prison; Dr. Frank Moore, superintendent of the Rahway Reformatory; George B. Wright, commissioner of charities and correction; Dr. Henry B. Costill, Trenton, and Dr. Alexander Marcy, Jr., Riverton, to assume charge of the sterilization of insane criminals, idiots and other defectives, both male and female, who are at present in the state institutions, in accordance with the provisions of the act passed by the legislature at its last session authorizing the appointment of such a commission.

Medical Society Meetings.—Camden City and County Medical Society, at its annual meeting, January 2, elected the following officers: president, Dr. Levy B. Hirst; vice-president, Dr. Grant E. Kirk; secretary, Dr. William I. Kelchner, and treasurer, Dr. Emma Richardson, all of Camden.——The Clinical Society of Mountainside Hospital, Montclair, was organized December 4 and the following officers were elected: president, Dr. Richard P. Francis, Montclair; vice-president, Dr. William H. Areson, Upper Montclair, and secretary-treasurer, Dr. Stella S. Bradford, Montclair.——The Practitioners' Society of Eastern Monmouth held its annual meeting in Monmouth, December 19, and elected Dr. Joseph T. Welch, Long Branch, president; Dr. Walter S. Whitmore, Oceanic, vice-president; Dr. Edwin Field, Red Bank, secretary, and Dr. William A. Robinson, Ocean Grove, treasurer.

Personal.—Dr. Henry B. Diverty has been appointed city physician of Woodbury and has been elected president of the municipal board of health.——Dr. G. Howard McFadden, Hackensack, physician of Bergen County, is suffering from septicemia due to a wound of the left hand.——Dr. Charles F. Adams, Hackensack, fractured his left arm in a fall on the ice, January 6.——Dr. Joseph B. Harrison has been reelected president of the Westfield Board of Health, and Dr. George S. Laird, city physician.——Dr. Hermann C. H. Herold, Newark, has been reelected president of the Newark Board of Health for the sixteenth consecutive term.——Dr. G. Herbert Richards has been reelected president of the Orange Board of Health for the eighth consecutive term.——Dr. George R. Moore has been elected president and Dr. Alvan W. Atkinson, secretary of the recently appointed staff of the City Tuberculosis Hospital, Trenton.

NEW YORK

New Isolation Pavilion.—The Buffalo Children's Hospital has opened a new isolation pavilion, which will, it is expected, meet all demands for the care of communicable diseases of

children. The building will accommodate twenty patients and contains both wards and private rooms, together with the necessary bath rooms and sun parlors.

Personal.—Dr. Elbert M. Somers, Ogdensburg, has been appointed medical superintendent of the Long Island State Hospital, Flatbush, vice Dr. Robert E. Doran, Willard, deceased.——Dr. Nelson C. Scudder, ward physician of Rome, has resigned.——Dr. Kent E. Williams has been elected president of the Rome Board of Health and Dr. Charles R. Mahady has been reappointed health officer.——The physicians of Oneida were entertained at an informal banquet by Dr. Amos P. Dodge, January 4.——Dr. Ward B. Whitcomb has been reappointed town health officer of Batavia.——Dr. George S. Allen, Clyde, has been appointed postmaster.——Dr. Henry A. McGruer, Syracuse, is ill with diphtheria at the Syracuse City Hospital.

New York City

Health Board Staff Cut.—On December 30 thirty-four physicians were dropped from the medical staff of the health department of New York City. This reduction of officers was required on account of the reduction in the budget for 1912.

Memorial to William Rice Pryor.—Dr. Joseph B. Rolater of Oklahoma City, Okla., has donated $500 toward the erection of a memorial tablet in the new building of the New York Polyclinic Medical School and Hospital to the memory of the late Dr. William Rice Pryor.

Annual Gift to Hospitals Small.—The Saturday and Sunday Association has announced that the annual collection for hospitals taken in 100 churches of the city amounted to only $15,000 thus far, whereas it was $30,000 last year. The association asked for $200,000.

Local Elections.—At the December meeting of the Williamsburg Medical Society, the following officers were elected: Dr. Simon R. Blatteis, president; Drs. Adolph Bonner and George I. Miller, vice-presidents; Dr. William K. Jacobs, secretary, and Dr. Marcus J. Levitt, financial secretary, all of Brooklyn. ——The Associated Physicians' Club of the Second Ward of Brooklyn has elected Dr. Abbott C. Combes, Flushing, president; Dr. Herbert L. Barker, Flushing, vice-president, and Dr. Franklin Booth, Flushing, secretary and treasurer.

Hospitals Need Money.—The Hospital for Ruptured and Crippled at Lexington Avenue and Forty-Second Street, which has treated 379,999 crippled persons during the past fifty years, and 12,604 new patients during the year ended Sept. 30, 1911, has a deficit of over $4,000 for the year and has appealed to the public for funds.——The Hospital for Deformities and Joint Diseases, which was founded in 1907 and which treated 2,400 cases during the past year has a deficit of $6,000 in its running expenses for the past year and needs help.——The Manhattan Eye, Ear and Throat Hospital also makes an appeal for funds to meet its increased expenditures arising from its work among the poor.

Model Tenement Opened.—The East River Homes, made possible through the generosity of Mrs. W. K. Vanderbilt, who invested $1,300,000 in the project, were opened on December 5. These model apartment buildings are located on East Seventy-Seventh Street and along East River. They occupy eighteen city lots and provide 383 apartments of from two to five rooms, 225 of which have already been rented. They were built in order to provide homes for those having incipient tuberculosis or other delicate persons who might be liable to the disease, and are so constructed as to provide practically all the advantages offered by sanatoriums. They are designed after the *Durchhäuser* of the German and Austrian cities. There are ample courts for air and light, outside staircases with many resting places, a roof equipped for out-door life and fresh-air treatment. Bathrooms, electric light, heat and hot water are included in the rents which range from $1.25 to $2 per room per week. Dr. Henry L. Shively is president of the board of trustees and Dr. Walter B. James is vice-president. It is believed that, on account of the economy of space in construction, the buildings will carry themselves and pay a fair return on the investment.

Academy and Public Health Work.—The Academy of Medicine has appointed a committee on Public Health, Hospitals and Budget, consisting of Drs. Charles L. Dana, Lindsley Williams, W. Gilman Thompson, John H. Huddlestone, Sigismund S. Goldwater, L. Emmett Holt, Abraham Jacobi, James A. Miller and Theodore C. Janeway. The duties of the committee are to organize a bureau to collect facts in regard to public health, sanitation and hygiene; to endeavor to establish active co-operation with all public health activities in the city; to keep the medical profession advised of current public health conditions; to render to the health, school and other public authorities and to the community at large an authoritative medical opinion on public health matters; to hold frequent conferences with city officials; to hold public meetings, and to give adequate publicity to the results of the committee's researches. The committee will assist in the preparation of the budgets of the various departments and will make a close and constant scrutiny of hospital conditions. The efforts of the committee have already obtained appropriations for new contagious hospitals in the Bronx and in Queens. Mrs. E. H. Harriman has agreed to pay the expense of employing a trained statistician to assist the committee. The academy has also adopted resolutions urging the legislature to pass the Clearwater bill providing that medical experts be paid through the courts and not by parties in whose behalf they testify. The academy asks that the bill be amended so that a physician shall not be considered a medical, surgical or special expert unless he is a graduate of a reputable medical college; has paid special attention for at least six years to the particular branch as to which he claims to be an expert; has had opportunities for laboratory or clinical study in that branch for at least four years, and is a member of a general and a special medical society in good standing. Another resolution was passed declaring that the acceptance of a fee by a physician contingent on the result of a medicolegal case is not in accordance with sound medical ethics.

PENNSYLVANIA

New Officers for County Society.—The new officers of the Columbia County Medical Society for the year 1912 are: president, Dr. Ralph E. Miller, Bloomsburg; vice-presidents, Drs. J. Sidney Hofla, Benton, and John T. McDonald, Bloomsburg, and secretary, treasurer and reporter, Dr. John W. Bruner, Bloomsburg.

Gift to County Society.—At the December meeting of the Berks County Medical Society, the president read a communication from a generous citizen, in which the benefactor offered to purchase any suitable property not costing over $12,000 the society to have the free use of the same for three years. At the end of this time the donor proposes to give one-third of the purchase price to the society.

Philadelphia

Sailor Dies of Beri-beri.—On January 11, four Malay sailors suffering with beri-beri were taken from the steamship *Kareea* by state quarantine officers and one died in the station hospital at Marcus Hook, January 12.

Personal.—Drs. W. Joseph Hearn, W. M. Late Coplin and E. Tillson Ward were elected managers at the annual meeting of the members of the corporation of the Southern Dispensary for the Medical Relief of the Poor, January 12.

Hospital Tablet Proposed.—At the meeting of the Forty-Ninth Street Association, January 12, a movement was begun to have erected a tablet in the Clarence Clark Park to commemorate the semi-centennial anniversary of the opening of the Satterlee Hospital in West Philadelphia during the Civil War. Dr. Seneca Egbert was appointed president of the association.

Hospital Gets Charter.—A charter was taken out on January 12, in the common pleas court for the Babies' Hospital of Philadelphia, at Wynnefield, in Fairmount Park. This hospital, which was maintained last summer as a volunteer charity by public spirited physicians, will be conducted along the same lines next year and obtaining a charter will secure its permanency.

Medical Inspection for Schools.—At the meeting of the Board of Education, January 9, Dr. Walter S. Cornell was selected as director of public school medical inspection (with a salary of $3,000 a year). The board has authorized the employment of 55 assistant medical inspectors at $600 per year each. Dr. Joseph S. Neff, Director of Public Health and Charities will proceed to hold examinations and make appointments so that Dr. Cornell may organize his staff and begin active work.

Douglas Hospital Fund.—Not only the required sum of $15,000 necessary for the liquidation of the builder's mortgage on the Douglas Hospital, has been contributed by public spirited citizens, but the subscription of the Philadelphia *Public Ledger* has a surplus of $507. The *Ledger* says: "While the purpose for which the *Public Ledger* opened the subscription has been achieved, use in plenty can be found in connection with the work of the institution for additional gifts. In each case, however, the *Public Ledger* will explain the situation

and leave open the question whether any sums that may be contributed shall be applied to general uses of the institution or be returned.

Southern Dispensary Needs More Room.—The Southern Dispensary for the Medical Relief of the Poor, 318 Bainbridge Street, was founded in 1816 and has had an uninterrupted career for nearly a century. During the past year, 10,601 patients were treated and furnished with medicines, bandages free and 1,569 prescriptions were compounded. Since the opening in 1816, nearly 400,000 patients have been treated and 550,000 prescriptions compounded and furnished without charge. The facilities for treating the increasing numbers that visit the dispensary have become inadequate and efforts are now being made to obtain funds to enlarge the old building and install modern appliances. The dispensary owns sufficient ground adjacent to the present building and the work on the new adition will be begun as soon as sufficient funds are available. This institution has never received any state or city aid. It treats people without regard to race, age, sex, religious belief or nationality. There is connected with the institution a staff of twelve physicians all serving without pay, conducting six clinics daily.

SOUTH DAKOTA

Society Meetings.—At the annual meeting of the Sixth (Mitchell) District Medical Society held in Mitchell, December 11, the following officers were elected: president, Dr. Elwin F. Reamer, Mitchell; vice-president, Dr. Frederick W. Freyberg, Mitchell; secretary, Dr. Clyde S. Bobb, Mitchell; treasurer, Dr. Floyd S. Kidd, Woonsocket; delegates to the state association, Drs. E. W. Jones, Mount Vernon, and William B. Ball, Mitchell; alternates, Drs. Charles V. Templeton, Woonsocket, and E. N. Wager, Bijou Hills; and censors, Drs. A. H. Hayne and George A. Clauser, Bridgewater.——The Fourth District Medical Society held its annual meeting in Highmore, December 27, and elected Dr. Napoleon B. Gearhart, Pierre, president; Dr. Joseph M. Walsh, Fort Pierre, vice-president, and Dr. Harry T. Kenney, Pierre, secretary-treasurer. The society adopted resolutions condemning contract practice and agreeing to render professional services only at the rates provided for in the fee bill. A schedule of fees was prepared and adopted by the society.

TEXAS

Epidemic of Meningitis.—An epidemic of meningitis has been prevalent for several weeks chiefly in northern and eastern Texas, some cases being reported as far south as Houston and Austin, the disease centering chiefly in the neighborhood of Dallas, where up to January 10, 160 patients with sixty-five deaths had been reported; Waco also reported at that time eighty-three cases with twenty deaths. Fort Worth and many other cities and towns in northern Texas also report cases. Secretary of the State Board of Health, Dr. Ralph Steiner, called a meeting of the state board at Dallas to discuss the situation and take up such measures as were deemed necessary. The board passed resolutions advising communities in which the disease appeared to close schools, theaters and other places of amusement and establish quarantine, and the local authorities in the various cities and towns have instituted a clean-up campaign. Dr. Abraham Sophian of the Rockefeller Institute has been in northern Texas delivering addresses and advising with the local authorities in regard to the management of the epidemic. A sufficient quantity of the antimeningitis serum approved by the New York Board of Health has been rushed to Texas and is being employed. The situation while serious is now improving and will not, it is believed, under the energetic measures adopted, spread widely.

GENERAL

Physiologists Elect.—At the annual meeting of the American Physiological Society held in Baltimore, December 29, Dr. Samuel J. Meltzer of the Rockefeller Institute for Medical Research, New York City, was reelected president, and Dr. A. J. Carlson of the University of Chicago was reelected secretary.

Edinburgh Graduates Dine.—The first annual dinner of the Edinburgh University Club of North America was held at the University Club, New York City, December 7, with Dr. J. Clarence Webster, Chicago, in the chair. The Hon. Joseph H. Choate, Ambassador James Bryce, Sir James A. Grant, M.D., Ottawa, and Dr. Horatio R. Storer, Newport, R. I., were elected honorary presidents of the club, which will hold its next annual meeting in Ottawa. Dr. William F. Maloney is secretary of the club.

Expenditures in War on Tuberculosis.—The figures of the third annual statement of expenditures issued by the National Association for the Study and Prevention of Tuberculosis show that during 1911, $14,500,000 was expended in the campaign against tuberculosis. Of this $11,800,000 was spent for the treatment of patients in sanatoriums and hospitals and for the erection of sanatoriums; $850,000 for examination and treatment of cases of tuberculosis in dispensaries and $500,000 for educational campaigns, and the remainder, $1,300,000 for the treatment of patients in open-air schools, prisons, and insane hospitals, and for local boards of health.

Bill to Relieve Technical Violations of Law.—On account of the recent levying of fines ranging from $1 to $20,000 each on a large number of hospitals throughout the country because of certain technical violations of the law governing the use of denatured alcohol, a bill has been introduced in Congress by Hon. J. Charles Linthicum of Maryland at the instance of Dr. Alexius McGlannan of Baltimore. This bill is called "A Bill for the Relief of Scientific Institutions or Colleges of Learning Having Violated Sections 3297 and 3297a of the Revised Statutes and the Regulations Thereunder." The bill authorizes the Commissioner of Internal Revenue on appeal to abate, remit and refund all taxes or assessments for taxes the liability for which is asserted against any scientific institution or college of learning, on account of any alcohol withdrawn from bond free of tax in accordance with the provisions of the statutes above quoted, and not used as authorized by the above-mentioned law and regulations thereunder; provided, that no assessment made of tax imposed shall be abated or refunded as to any alcohol so withdrawn and used for beverage purposes, and provided further, that all applications for relief under this act shall be filed on or before July 1; and that no liability incurred on or after January 1 shall be so relieved.

FOREIGN

Centennial of the Medical School at Lima, Peru.—The first centennial of the Escuela de Medicina at Lima was recently celebrated, with much ceremony, and our exchange, the *Cronica Medica*, of Lima, devotes a special number to the occasion, with reproduction of the act of incorporation and of the various historical and other addresses made by the dean and other officers of the medical faculty and the president of the republic.

International Congress for Gynecology and Obstetrics.—The date for the approaching sixth international congress has been appointed as May 31 to June 2, 1912, to meet at Berlin as previously announced. Prof. E. Bumm is to preside, and the secretary general is Prof. E. Martin, Artilleriestr. 18, Berlin N. 24, Germany. The main subject for discussion is to be "The Treatment of Peritoneal Wounds in Relation to Obstetrics and Gynecology." The committee of organization includes Professors Döderlein and A. Martin of Germany, von Ott of Russia, and Mangiagalli of Italy.

Recent Deaths in the Profession Abroad.—Besides those mentioned by our correspondents, the following deaths have been reported: Dr. E. Wang of Christiania, editor of the *Norsk Magazin for Lægevidenskaben*, aged 44. His writings were mostly connected with medical chemistry.——Dr. Sophia Jex-Blake, formerly dean of the Edinburgh School of Medicine for Women, aged 71. She came to America and began the study of medicine in Boston in 1866, completing her course at Berne. In 1874 she founded the London School of Medicine for Women, and the Edinburgh School of Medicine for Women in 1886. She retired from practice in 1899, and died recently at her home near London.

International Epilepsy Congress.—The next meeting of the Liga Internationale contra Epilepsie is to be held at Zurich, Switzerland, opening Sept. 7, 1912, just preceding the International Congress of Psychology and Psycho-therapeutics. Forel will probably preside at the meeting. The subjects proposed for discussion are "Alcoholic Epilepsy" and "Salt-Free Diet in Epilepsy." These topics have been proposed by Italian and Swiss members of the league, and American members are requested to suggest some other subject for discussion; they can communicate by direct correspondence with Dr. L. J. J. Muskens, 365 Overtoom, Amsterdam, Netherlands, or through Dr. J. F. Munson, Craig Colony for Epileptics, Sonyea, N. Y.

Excursion of German Physicians to America.—For some years the Germans have been organizing annual medical educational trips to health resorts in and near their country, but next fall they propose to make the trip an excursion to the United States on the occasion of the International Congress

of Hygiene, to open at Washington in September. Dr. A. Oliven of Berlin, Potsdamerstrasse 134, is the moving spirit of these personally conducted educational trips, and arrangements have been made with the Hamburg-American Line to leave Hamburg Sept. 7, 1912, and after visits of some days in New York, Philadelphia, Baltimore, Atlantic City and Washington, to go west to Chicago for a three-day visit and to return by way of Montreal and Boston, leaving New York October 10. The total expense for the trip is stated by the circular to be from 1,700 to 2,500 marks, about $425 to $625, for the six weeks' trip, but the physicians in the party can make a longer stay if they wish, returning on any of the Hamburg Line steamers up to the end of March, 1913. THE JOURNAL joins with the promoters of the trip in hoping that a large number of physicians may take part, and wishes them a cordial welcome to America.

CANADA

Personal.—Dr. Hermann M. Robertson has returned to Victoria, B. C., after a year abroad in graduate work.——Dr. James N. Hutchison, Winnipeg, has returned from a visit to Europe.——Dr. John H. Leeming, bacteriologist to the city of Winnipeg, has returned from Europe.——Dr. James A. Ashbaugh, medical health officer of Windsor, has recommended that an isolation hospital be provided for the treatment of communicable diseases.——Lieutenant-Colonel C. W. Belton, surgeon of the Royal Canadian Regiment, London, will succeed Lieutenant-Colonel Hero R. Duff as chief administrative officer of the Third Division of Kingston, and Lieutenant-Colonel Duff is transferred to Toronto.

Vital Statistics.—The Registrar-General of Ontario is sending to the publishers copy for a blue book relative to the vital statistics of the province for 1910. In that year, this report will state, there were 55,871 births, 24,036 marriages and 33,539 deaths. Of the deaths cancer caused 1,077, tuberculosis 2,287, as against 2,380 in 1909, pneumonia 1,458. Women lost their lives in childbirth in 284 cases. Ninety-one persons took their lives by various means, 26.3 per cent. employing hanging. Two hundred and nine were killed by motor cars. Regarding mortality among infants the number of deaths were 6,649 under the age of 5 years. Of the births 28,644 were males and 27,207 females. There were 350 pairs of twins, 264 boys and 376 girls. There were five cases of triplets.

Ontario Health Matters.—The chief medical health officer of Ontario, Dr. John W. S. McCullough, Alliston, is in the United States inquiring into the most recent advances in public health matters. On his return to Toronto he will take up the question of dividing the province into seven or eight health districts, in charge of competent medical men who will devote all their time to public health work, be appointed by the provincial government and receive remuneration commensurate with this work. The government will be prepared with a scheme before the meeting of the legislature early in February. At the present time there are some 800 boards of health in the province outside the large cities, with as many health officers who receive little more than $50 per annum for their work. These will all be abolished; and the new seven or eight districts will be directly under the control of the government instead of under municipalities as formerly. It is not intended to interfere with the boards of health of the larger cities, where competent health officers already devote their entire time to their work.

Division of Fees in Toronto.—The Toronto Academy of Medicine discussed the following resolution at its regular monthly meeting on the evening of January 2:

(a) That the secret division of a fee, or fees, with any person or persons, who may be instrumental in influencing a patient, or patients, to apply for operative care or professional advice, is unworthy of any member of the medical profession.

(b) That if such division of fee is made by a member of the Academy of Medicine, Toronto, it should be counted as sufficient ground for the expulsion of the member.

(c) That it shall be the duty of the Council of the Academy to investigate charges against members made on the basis of such division of fee; and on proof of offense the Council may either permit the resignation of the person or expel him from the Academy.

Although the fee-splitting system is not to any extent in vogue in Toronto, there are said to be a few sporadic cases, sufficient to call for action by the Academy of Medicine. After considerable discussion, which showed a feeling of unrest, the matter was placed in the hands of a special committee to investigate, and report at a future meeting.

Hospital News.—Toronto Western Hospital needs $200,000 for the equipment of new wings now under course of construction. When completed the Western Hospital will be one of the best in the province of Ontario.——The annual report of the Mental Hospital, New Westminster, B. C., by Dr. Charles E. Doherty, medical superintendent, shows that at the beginning of September last there were 650 patients in that institution. At the close of the month 658 patients were in residence and 95 out on probation, making a total under treatment of 753. In the hospitals for the insane in the province of Ontario, there are 6,803 insane persons, about one in every 367 of the population. In 1890 the number of the insane was 4,210, an increase of 61 per cent. The population of the province increased in that time 24 per cent. Owing to the fact that the hospitals for the insane are now considered in the same class as modern hospitals, with up-to-date equipment, that may be set down as the cause of this apparent increase in insanity. It is said that fully 50 per cent. of the patients under treatment are there from avoidable causes. It cost the province in the last hospital year $1,043,145.57 to maintain these provincial hospitals. During the past ten years the total amount expended has been $9,351,094.07, about one-eighth of the total revenue of the province. At the present time there are 648 patients who have been a charge on the province for twenty years continuously, costing about $2,500,000. About 80 per cent. of the one-fourth cured recover in the first year of their admission. In the Toronto Hospital for the Insane for the year ending Sept. 30, 1911, thirty-two men, or 22 per cent. of all men admitted were entered through paresis. Fully 30 per cent. of the men and 10 per cent. of the women admitted to all these hospitals in the province are suffering from conditions due directly or indirectly to alcohol.——Toronto is to have a new and modern isolation hospital.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Dec. 30, 1911.

Typhoid Fever Due to Fried Fish.

As a result of an exhaustive inquiry, Dr. Hamer, health officer of the London County Council, has traced an outbreak of typhoid fever to the consumption of fried fish. The evidence points to the delivery of a consignment of infected fish on August 17 or 18 last. The deliveries in London on these dates were in some instances from unusual sources, owing to dislocation of the traffic caused by the strike. In concluding, Dr. Hamer states: "This outbreak adds another instance to the now growing list of outbreaks in which inquiry failed to show any other explanation than the consumption of fried fish."

The Final Report of the Royal Commission on Tuberculosis

After ten years of experimental work, embodied in many bulky reports and appendices, the royal commission appointed to inquire into the relation between human and animal tuberculosis following Koch's statement, at the International Congress on Tuberculosis in London, that human and bovine tuberculosis are distinct diseases, has issued a final report. It contains important general conclusions by Dr. Arthur Eastwood, who has investigated both culturally and microscopically thirty viruses obtained from bovines, 130 from man, fifty-three from swine and eight from other animals affected with spontaneously contracted tuberculosis. He also investigated the cultural characters on different media of bacilli recovered after residence in experimental animals: 447 strains in all, of which 108 were ultimately derived from bovines, fifty-eight from swine and thirty from other animals. The histologic part of the investigation deals with the tissues of 777 animals experimentally infected, including bovines, rabbits, rhesus monkeys, chimpanzees, baboons, lemurs, swine, guinea-pigs, goats, dogs, cats, rats, mice, horses, fowls and parrots. The bacteriologic character of various strains of avian tubercle bacilli were also investigated and the histologic changes produced by them on the tissues of birds and various mammals.

1. Comparing tubercle bacilli of known human origin with bacilli from spontaneous tuberculosis in other mammals, in every instance the bacilli obtained from animals were identical culturally and microscopically with bacilli from certain cases of human tuberculosis. 2. In all parts of the human body and in human sputum collected tubercle bacilli were found both culturally and histologically identical in every respect with the tubercle bacillus commonly present in the bodies of tuberculous cattle and swine. 3. Many of the

viruses of human origin grew with great cultural luxuriance and produced less histologic damage, experimentally, in the organs of certain animals than the bacilli commonly obtained from cattle and swine. 4. In the majority of cases cultures from the same virus used through a protracted series of experiments remained comparatively stable in their characteristics. 5. This suggests that changes in the character of a virus do not readily or rapidly take place in the human body. 6. Certain viruses were obtained which hold an intermediate position between the viruses obtained from man and from animals. It was, therefore, impossible to class all the strains of mammalian tubercle bacilli as belonging to two stable types. These intermediate viruses bridged the apparent gap between the viruses, on the one hand, which produce acute tissue destruction in the bovine and the rabbit, and are of relatively scanty growth on culture media and those viruses, on the other hand, which produce less tissue damage in the bovine and the rabbit and grow more luxuriantly on artificial media.

Unity of Characteristics.—7. Underlying all the mammalian viruses was an essential unity of characteristics, the differences observed being of degree, but not of kind. On artificial culture media they all grew in the same way, though they differed in the amount of growth. In the tissues of experimental animals they produced lesions histologically characteristic of mammalian tuberculosis, though the intensity of the changes produced differed. 8. Comparing the mammalian with the avian viruses, there were differences not merely of degree, but of kind. 9. On media the growth of the avian bacillus could be distinguished without hesitation from the growth of the mammalian bacillus. 10. On experimental animals infections due to the avian bacillus could be unmistakably distinguished from those due to the mammalian bacillus. 11. It was not possible, however, in the tissues of all animals, under experimental conditions, to distinguish with certainty under the microscope lesions due to avian bacilli from lesions due to mammalian bacilli. Sometimes, in the tissues of mammals, the avian bacillus produced tubercles of a chronic type indistinguishable from tubercles produced by mammalian bacilli.

The Royal Society of Medicine

The Royal Society of Medicine, which recently was formed by the coalition of many medical societies which flourished in London, is building at considerable cost new premises, to meet the needs of its large and growing membership. Toward the cost subscriptions have been made by the members, but as the amount required is much greater than that subscribed, an appeal is being made to the public. The Lord Mayor of London, Sir Thomas Crosby, the first doctor who has ever held that distinction, in supporting the appeal has pointed out that an impression prevails that the new building is designed mainly for the comfort and advantage of the fellows. On the contrary, from the foundation of the parent society (the Royal Medical and Chirurgical Society) in 1805, without any help from the public, work of the greatest importance to the public welfare has been done and large sums have been spent for this purpose. In its well-known *Transactions*, the most representative publication of scientific medicine in the empire, almost every discovery or development in the last century has been published. It is estimated that the society has spent $500,000 in investigations and the publication of results. One investigation, the value of which it is impossible to overestimate, was carried on for nearly thirty years—the best method for restoring the apparently drowned. The final method, devised by Schäfer (see THE JOURNAL, Sept. 5, 1908, p. 801), was so clearly an advance that it has been adopted by the army and navy and several life-saving societies, and also in America, Japan and other countries. Another most important work was a "Report on the Climates and Baths of Great Britain and Ireland," which was issued in two large volumes illustrated with maps, etc. The publication of this report marked an epoch in the development of British watering-places. Among other subjects either originated or developed by the society are the hypodermic method of administering drugs, the open-air treatment of consumption, the influence of heredity on cancer, consumption and diseases of the nervous system and vaccine therapy. The society has one of the largest medical libraries in the world, numbering 100,000 volumes, and in it has been originated a new departure. A physician working on any subject almost anywhere in the world can, if a member, have an abstract sent to him of the most recent literature. Army doctors in the Chitral Valley, Assam, the Sudan and South Africa have thus been assisted in their investigations.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Dec. 29, 1911.

Death of Professor Lannelongue

Dr. Odilon-Marc Lannelongue, professor of surgical pathology at the Faculté de médecine de Paris, died of pulmonary congestion, aged 71, the day after he left the presidency of the Académie de médecine.

He was born at Castera-Verduzan, Department of Gers, and at the age of 16 came to Paris to study medicine. He was appointed intern of the hospitals in 1862 and physician in 1867. Two years later he was appointed surgeon of the hospitals and *agrégé* professor of the Faculté de médecine. In 1884 he obtained the chair of surgical pathology at the Faculté de médecine de Paris. He had been a member of the Académie de médecine since 1883 and in 1885 was elected a member of the Académie des Sciences for the section of medicine and surgery to replace Professor Verneuil. In 1900 he presided over the thirteenth International Congress of Medical Sciences. As I mentioned in one of my previous letters (THE JOURNAL, April 23, 1910, p. 1387), he founded a very important prize (the Lannelongue prize), which the Société de chirurgie de Paris distributes every five years.

For a long time Dr. Lannelongue had given most of his time to politics. He was elected first a deputy and in 1906 a senator. In the senate he introduced a bill to combat depopulation, and presided over the commission formed for that purpose.

Being absorbed by politics, Dr. Lannelongue had, in his later years, somewhat neglected his scientific work, which, however, is important. He especially contributed to clearing up the confused questions relating to tuberculous alterations of the bones and syphilitic affections of the skeleton. The anatomic and experimental proof of the tuberculous nature of cold abscesses and fungous arthritis is due to him. This indicated that to cure these various lesions a complete destruction of tuberculous products was absolutely necessary, which suggested the use in white tumors of the "sclerogenic" method (injections of zinc chlorid), devised by Lannelongue. He was the first in France to practice craniectomy, to decompress the brain in backward children.

Infant Mortality in the Country

Dr. Louis Cruveilhier has just published in the *Revue philanthropique* an interesting study on infant mortality in the country. In seven essentially agricultural departments, during three years, there has been observed an average of more than twenty-one deaths per hundred under the age of one year, while only two of the twenty-seven departments in which more than 30 per cent. of the population is industrial, those of the Seine and the Bouches-du-Rhône, have an equal percentage of deaths of infants under one year. Generally speaking, it appears from the statistics gathered by Cruveilhier that for infants under one year, mortality is very often as great and sometimes greater in the country than in urban and industrial centers.

The Budget of the Public Charities

The municipal authorities have just received the report on the budget of the public charities in 1912. The expenses amount to $13,400,000 (67 million francs). The public charities having about $8,000,000 revenue of its own, the contributions of the city of Paris for this year will be about $5,400,000. In view of this large sum the suggestion is made in the report that it would be well to municipalize the service of the public charities which at present is an autonomous service.

It is interesting to note that more than one-fourth of the budget of public charities is absorbed by the personnel. Since 1904, more than $1,200,000 have been devoted to improvements in pay for the hospital employees besides the expenses of improvement of food and lodgings which represented about one million dollars. Now the municipal council has before it new claims which represent an annual expense of eight million.

Patients in Comfortable Circumstances in Hospitals

In the report to the municipal council on the budget of the public charities, M. Henri Rousselle mentions the protests of the Syndicat des médecins de la Seine against the admission of non-indigent patients into the hospital. The Syndicat complains that the hospitals are not reserved exclusively for the very poor. The administration replies that well-to-do patients are received in the hospitals only in the pay-wards. As for patients who are neither well-to-do nor indigent and from whom

the administration requires the reimbursement of the expense of treatment, these are either victims of accidents carried in case of emergency to the nearest hospital, or persons whose circumstances (isolation, contagious diseases, etc.) require hospital treatment, or—and these are the most numerous cases—persons whose conditions demand surgical treatment and who cannot because of the slenderness of their resources meet the expense of an operation at home or in a *maison de santé*. The administration declares that the number of such patients does not exceed 2 per cent. of the total. Moreover, the administration maintains that it uses careful means of verification. Except in urgent cases requiring immediate admission, every consultant is obliged to present all proofs of identity, rent receipts and certificates of employment, permitting exact appreciation of the situation. The belief is expressed that it is impracticable to go further. "We cannot," says the report, "apply to the population of Paris a vexatious regulation in order to protect the medical profession, whose crisis is particularly due to the excessive number of physicians, elevation of their fees and the increasing cost of living."

The Classical Studies and Medicine

The question of classical studies continues to be one which arouses keen interest. The partisans of these studies among other arguments invoke the example of the University of Michigan which has published a series of memoirs intended to establish the importance of the study of Greek and Latin in secondary education. The Société de l'internat des hôpitaux de Paris has just started a movement in favor of classical studies. In a vote taken on the subject of the desirability of Latin and Greek in secondary education as a requirement of studies for admission to the medical school, 121 responses were received, of which eight were against classical studies, three in favor of Latin and against Greek and 110 in favor of Latin and Greek.

Antityphoid Vaccination

On December 19 Professor Chantemesse read a paper before the Académie de médecine on the results which Professor Vincent and himself had obtained by antityphoid vaccination in Algeria last summer. Four vaccines, prepared by various methods, were used. The vaccine prepared by the method of Sir A. E. Wright was employed the most frequently (for 129 soldiers). The three others were injected each into about seventy-five soldiers. The preventive efficiency of each of the four vaccines seemed to be about alike for all.

According to Chantemesse, there are two requisites in antityphoid vaccine: the first is that it shall contain no living bacilli; the second, that it shall demand only an easy mode of preparation, which is certain in its results independently of the skilfulness of the operator. Heating which kills the bacillus without destroying the toxin appears to be the only operative procedure which admits of no surprises.

In emphasizing the necessity of the extended use of antityphoid vaccination, Chantemesse cites the excellent results obtained in the United States Army.

These facts added to the data obtained from the colonial troops of Germany and Great Britain and a few hundred French soldiers in Morocco permit the statement that the benefits of antityphoid vaccination which have already been accorded to 200,000 soldiers ought not to be refused to the civil population. Professor Chantemesse accordingly believes that a campaign in favor of this method of prophylaxis should be inaugurated among the French population under the age of 35.

Dr. Netter, *agrégé* professor at the Faculté de médecine de Paris, also laid stress on the results of antityphoid vaccination in foreign armies, especially that of the United States. He said that the campaign against typhoid in America had been carried on with the same decision, energy and success as that against yellow fever and malaria.

Moreover, documents sent to the Dresden Exposition by the Japanese minister of war showed that 2,977 were vaccinated in 1908 and 24,795 in 1909. There were in the same garrisons 12,915 vaccinated soldiers and 20,245 not vaccinated. There were among the former thirteen cases of typhoid fever with one death; among the latter 294 cases and twenty-nine deaths. In other words, the proportion of cases was 1 per thousand among the former and 14.52 per thousand among the latter. The percentage of deaths among the patients was 7.7 for the inoculated and 16.6 for the non-inoculated. The spread of anti-typhoid vaccination among the European troops of India, where, however, it has been optional, is very remarkable. From 66 per thousand in 1908 it has reached the proportion of 896 per thousand in June, 1911. The number of cases of death from typhoid fever decreased with the increase of vaccination. From 1,095 cases and 224 deaths it has fallen to 350 cases and forty-seven deaths.

The results, which are in agreement with those obtained at Morocco, are such as to make it desirable that the example of the United States should be followed in France.

Pharmacists' Mistakes and the Means of Remedying Them

Lately the papers have had much to say about various errors committed by pharmacists. As a provincial pharmacist remarks, it is regrettable that in Paris pharmacists do not ask the customers for their names and addresses, which is ordinarily done in the provinces. The advantage of this plan—which, by the way, is exacted by law—is evident. If the pharmacist has the names and addresses of his customers, he has the means of remedying in many cases a mistake in filling a prescription if it is learned in time. Professional secrecy, to which the pharmacists are bound, is a sufficient guarantee of discretion so far as the patients are concerned.

The Sale of a Medical Practice

French jurisdiction considers the sale of the practices of physicians and surgeon-dentists as illegal and void, a practice being a non-commercial article since it depends on the professional quality of the practitioner and the confidence he inspires. Notwithstanding, Paris courts have just decided that such a sale, in this instance a dental practice, is valid when it is based on a lease-hold and the buyer's consequent ability to call himself the seller's successor.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Dec. 29, 1911.

Personal

Professor Ziehen, director of the psychiatric and neurologic clinic in Berlin, will resign his position at the end of the winter semester and discontinue all medical work, in order to devote himself exclusively to psychologic studies. For this purpose, he will remove to Wiesbaden, where he will erect for himself a private psychologic laboratory. Ziehen is in his fiftieth year. His separation from the teaching body of our faculty will occasion the greatest regret. Ziehen, soon after his entrance into his position in Berlin, let it be understood that he placed the greatest emphasis on his work in the clinic and in the laboratory. He could never be obtained for consultation work. Gradually he has passed from the psychiatric side more and more to the psychologic problems and activities, which secured recognition by the bestowal of the title of honorary doctor of the philosophic faculty on the occasion of the centennial of the Berlin university.

Number of Physicians in Germany

Dr. Prinzing of Ulm annually publishes in the *Deutsche medizinische Wochenschrift* a statistical article on the medical profession in Germany, based on the statements of the *Reichsmedizinalkalendar* (medical directory). From this the number of physicians in Germany at the end of 1911 amounted to 32,835 or 5.02 per 10,000 inhabitants. The increase is somewhat less than in previous years. In the last three years the number of physicians in Germany has increased approximately as rapidly as the population. The number of licenses to practice was very nearly the same as during the previous year. On the other hand, the number of medical students is constantly increasing. In the summer semester of 1911 there were about 12,000 students of medicine at the German universities. In greater Berlin, including thirty-two suburbs, there were in 1911 about 4,000 physicians or 10.9 per 10,000 inhabitants. The number of women physicians is 118. Of these thirty-four are in Berlin. The number of women medical students has increased very much; while in the winter of 1909-10, there were only 371, in the summer of 1911, there were 549. The percentage of specialists is also rising. For 10,000 inhabitants there were in the year 1911, 3.45 specialists. Among 100 physicians, there were in all the great cities together, 35.9 specialists; gynecologists are the most numerous among these. Prinzing concludes his article with the remark that a considerable increase in young physicians is to be expected from next year on.

Forfeiture of the Privat-Docent Position

The permission to lecture is forfeited by a resignation. It is equivalent to a resignation, (1) if a privat-docent, without expressed permission of the faculty, omits the notices of his lectures in the catalogue (*Vorlesungsverzeichniss*) for two

successive semesters; (2) if during four successive semesters he has held no lectures without good excuse; the faculty is to judge of the circumstances; the privat-docent has the privilege of appealing from its decision to the minister; (3) if he removes his permanent residence from Berlin or its immediate neighborhood without express permission. The permission is to be sought by the privat-docent from the faculty, which shall lay it before the minister with an expert opinion for decision; (4) if he takes a position requiring his full time outside of the university unless the faculty grants his request to retain his position as privat-docent. Whether this permission shall be recalled at any time is to be decided by the faculty in doubtful cases.

International Sanitary Conference

The international sanitary conference which has been holding its sessions in Paris since November 7 at the invitation of the French government, was closed a few days ago. An editorial committee is busy with the collection of the results of the conference. In January the German delegates will go again to Paris for a final session.

Occupational Mortality in Prussia

The Prussian government has recently published some statistics in regard to the mortality in the single trade groups on the basis of the census of trades for the year 1907 and the official statements regarding the occupation of those who died in the years 1906 to 1908. While these do not furnish unobjectionable data for all professions or trades, approximate statistics have been obtained which seem to be quite valuable. If the three principal means of livelihood, agriculture, industry and commerce, are compared with each other, the most unfavorable mortality (14.25 per 1,000) of the male workers is shown by commerce. Agriculture is only a little more favorable (14.01), while industry has the extraordinary advantage of only 11.50 per 1,000. This picture is altered, however, if in place of the entire mortality, that for the various ages is considered. Looked at in this way, agriculture presents the most favorable conditions at all ages; the mortality of persons engaged in industry is about 15 to 25 per cent. higher at the ages from 15 to 40, and at older ages about 40 to 50 per cent. higher than in agriculture. Transportation and commerce show still more unfavorable figures. As for example, the relative figure for the ages of from 30 to 40 years is 7.85, while that of those engaged in industry is only 6.32 and of those in agriculture 5.14; in the same way in the age group of from 40 to 50, the relative rate is 14.02, as compared with 11.71 and 8.60. To a considerable extent, these unfavorable figures are due to the liquor trade (Beherbergung und Erquickung), which is found in this group and which is characterized by a high mortality.

Of the single industrial trades, the stone and earth industry presents the most favorable figures, probably because it is a summer trade, so that those who have died in winter are reckoned in other callings. In mining, the younger classes show a most unfavorable and the older a more favorable figure than industry in general. The cause of this is not easy to ascertain. It is possible that there is a gradual selection of the fittest. The metal trades appear to be more favorable in all age groups, and the machine industry more favorable than the total of the industrial trades in general. Quite as favorable, partly even more favorable, is the position of the chemical industry. The textile trades by no means show the high mortality that would be expected. The most unfavorable is the clothing and cleaning trades, probably because this is a field of domestic industry with insufficient remuneration. The building trades show until the age of 30 a more favorable and after that a more unfavorable rate. The foodstuffs industry has the average rate until the age of 40 and later a somewhat higher mortality.

BUDAPEST LETTER

(From Our Occasional Correspondent)

BUDAPEST, Dec. 30, 1911.

Vital Statistics of Budapest

Budapest has for years been famous as a healthy city, and it is satisfactory to find that the death-rate in 1910—18.5 per 1,000—was, with the single exception of the previous year, the lowest on record. One obtains some idea of the meaning of this figure when it is remembered that the death-rates of New York, Moscow and Dublin are above 20 per 1,000, while the death-rate for the whole of Russia is more than 30 per 1,000. In Budapest, as might be expected, the highest mortality is found in the central crowded districts, while it is low indeed around the circumference. Comparing the mortality of particular diseases to-day with that of twenty years ago in Budapest, it is gratifying to find that in the case of all the acute infectious diseases there is marked improvement. This is noticeably so in the case of small-pox, scarlatina, diphtheria and typhoid fever, and to a less extent for measles and whooping-cough. In the case of epidemic diarrhea and of tuberculosis there is no improvement. The last-mentioned disease, followed closely by malignant disease, nervous diseases, diseases of the heart, and pneumonia, none of which show any marked improvement, contributes most largely to the death-rate. It is not a matter for congratulation, however, that the marriage-rate and birth-rate tend to move parallel with the death-rate. Last year both of them reached their lowest point since 1873. That the birth-rate is not entirely influenced by economic causes is shown by the fact that the decline is greatest in the most wealthy districts, such as the Leopoldtown (the rich quarter) and least in Köbanya, populated by the poorest people.

Damages for Drawing Teeth

A successful suit for damages against an unqualified dental surgeon has recently been settled under somewhat peculiar circumstances. It appeared that a Budapest soap-maker had suffered from excessive bleeding after tooth extraction. Other members of the family had been troubled in the same way, and one had actually died, showing clearly the hemophilic constitution. He was introduced to the defendant, an unqualified dentist, who told him his teeth could be extracted without risk by means of a new American invention. This unqualified dentist then extracted six teeth. Profuse bleeding followed, and the plaintiff was under medical treatment for some time. The operator was compelled to admit that he had never qualified as a dental surgeon, and he was fined to the extent of $560 (2,800 crowns) damages.

Suicide of Surgeon After Operation

An incident is reported in the *Adeverul* (Bucharest, Roumania) which is full of pathos and interest for medical men. It appears that a Dr. C. Lascul was driving past a farm when a poor woman ran out of a cottage and begged him to see her child, who was very ill. The doctor after examining the patient came to the conclusion that he had diphtheria, and advised that he should be removed to the town hospital. The parents refused to part with the child; and Dr. Lascul was compelled to do the best he could for him in the rude cottage. Calling next day, he found that it was necessary to perform an operation—presumably tracheotomy—and single-handed he essayed to carry it out. Something, however, went wrong during its performance, and though he gave up his engagements and remained with the child some time, he saw that it was impossible to save the child's life. This unhappy occurrence so much affected his mind, that he burst into tears and reproached himself with being a murderer. He then hastily wrote a note, and putting it under the ink-bottle, asked the mother for a drink of water. No sooner had she left the room to fetch it than the report of a révolver was heard, and on hurrying back she found Dr. Lascul dead with a bullet-wound in his temple. The note read as follows: "Pardon a young doctor his involuntary error, by which he has deprived you of your child." Soon afterward the child died also.

Death from a Wasp Sting

A tragic and interesting occurrence was investigated by the Budapest coroner last month. A laborer was drinking a glass of beer, when he felt a sudden pain in the throat in connection with a solid body that had entered his mouth in the liquid. He coughed the body out and found that it was a wasp. Beyond natural fright and some discomfort in the throat, he seemed but little the worse for his experience, and for the next few days he was comparatively well, so that medical assistance was not sought. Then he felt rather faint and ill, but continued at work, till the sixth day after the sting, when he was so unwell as to have to call in a doctor. The medical man found little evidence of serious illness and was inclined to regard the condition as not being of much consequence. But the symptoms rapidly increased and took on a grave character. Cellulitis of the throat and nasal passages developed, and death from septicemia followed in two days. When the illness assumed a severe form, the malady showed the characteristics of a spreading cellulitis, and not those of toxemia. Hungary is fortunately free from the more virulent wasps that are to be found in the Balkan states, but this case shows that the indigenous insects are capable of producing dangerous injury.

Marriages

ROBERT S. REIMERS, M.D., Keokuk, Ia., to Miss Clara Hoffman of Muscatine, Ia., at New London, Ia., January 3.

REGINALD MYRON WILDISH, M.D., Blunt, S. Dak., to Miss Nell Emilo Sylvester of Surprise, Neb., December 27.

BARZILLA MILTON HUTCHINSON, M.D., Chicago, to Miss Marie Nelson of Portland, Me., in Chicago, recently.

ANNA G. SEDAN, M.D., Mount Auburn, Cincinnati, and Thomas H. Benner of Columbia, Tenn., January 3.

CAPTAIN JOSEPH F. SILER, M. C., U. S. Army, to Miss Kate D. McNeil of Charlottesville, Va., December 28.

I. TYLER FUGATE, M.D., Anawalt, W. Va., to Miss Anna Laura Mitchell of Louisville, Ky., December 27.

RIDGAWAY R. MERRYMAN, M.D., Baltimore, to Miss Gertrude R. Myers, at Wilmington, Del., September 23.

JOHN HENRY VON DREELE, JR., M.D., Baltimore, to Miss Marvel E. Scarff, at Baltimore, December 27.

FRANCIS P. O'NEIL, M.D., Midland, Md., to Miss Elizabeth Barrett, at Cumberland, Md., December 27.

LEWIS WINE BREMERMAN, M.D., to Miss Margaret Thomas Alexander, both of Chicago, January 11.

CHARLES A. MORIARITY, M.D., to Miss Mary B. Minnick, both of Philadelphia, January 9.

DARWIN DELAP, M.D., to Miss Elizabeth B. Pierce, both of Kansas City, Mo., December 30.

RALPH E. PORTER, M.D., Milwaukee, to Miss Marjorie Hunt of Phillips, Wis., January 4.

BERNARD MANN, M.D., to Miss Stella R. Kahn, both of Philadelphia, December 31.

EDWARD A. VAN FLEET, M.D., to Miss Oleva M. Kuehn, both of Omaha, December 27.

HOWARD C. MCMILLIN, M.D., to Miss Lena Beyer, both of Morton, Ill., January 3.

Deaths

Morris **Franklin Cawley, M.D.** University of Pennsylvania, Philadelphia, 1888; a member of the Medical Society of the State of Pennsylvania and Association of Military Surgeons of the United States; medical inspector of the State Department of Health for Lehigh County and the chief of the State Tuberculosis Dispensary of the county; from 1889 to 1896 secretary and once president of the Lehigh County Medical Association; for three years health officer of Allentown and since 1900 health officer of Lehigh County; for thirty-three years a member of the National Guard, appointed assistant surgeon in 1888 and major medical corps eleven years later and assigned to the Fourth Infantry; during the Spanish-American War surgeon of the Fourth Pennsylvania Infantry, U. S. V.; died at his home in Allentown, January 6, from cerebral hemorrhage, aged 54.

John Dale **Bedford, M.D.** Missouri Medical College, St. Louis, 1883; of Amarillo, Tex.; a member of the American Medical Association; for many years a practitioner of Honey Grove, and surgeon for sixteen years of the Sherman-Honey Grove division of the Sante Fe System; health officer of Honey Grove for many years, and a member of the school board; for the last six years physician to the Bedford Sanitarium at Amarillo; died in St. Paul's Sanitarium, Dallas, January 1, from pneumonia, aged 54.

Hugh **Patrick Roden, M.D.** Missouri Medical College, St. Louis, 1870; a member of the American Medical Association and a veteran of the Civil War; for several terms a member of the board of education of Newark, N. J., and a member of the staff of St. James' Hospital; died at his home in that city, December 31, from pneumonia, aged 65.

Silas D. Black, M.D. Medical College of Indiana, Indianapolis, 1875; formerly of Brazil, Ind.; for several years a member of the city council and secretary of the board of health; died at his home in Los Angeles, December 31, from heart disease, aged 60.

William Henry Wirt, M.D. Rush Medical College, 1869; a member of the American Medical Association; formerly president of the Ashland County (O.) Medical Society and vice-president of the Sixth District Medical Society; for eighteen years a member of the Loudonville Board of Health and board of education and president of the latter body, recently elected a member of the board of public affairs of Loudonville; died at his home in that city, December 27, from pleuropneumonia, aged 70.

Amos J. Harris, M.D. New York University, New York City, 1861; a member of the American Medical Association; land agent for North Central Kansas, with headquarters at Kirwin, during the administration of President Cleveland; representative in the Pennsylvania legislature from Northampton County in 1877 and 1878; for one term chief burgess of Hellertown and for seven years school director; died at his home in that place, December 25, aged 75.

William Constantine Pise Boone, M.D. University of Maryland, Baltimore, 1872; of Plainfield, N. J.; a member of the Medical Society of New Jersey and a Confederate veteran; formerly city physician of Plainfield and coroner of Union County; a member of the attending and consulting staff of Muhlenberg Hospital since 1880; died in Johns Hopkins Hospital, Baltimore, December 30, from pneumonia, twenty-four days after a surgical operation, aged 67.

Arthur Vincent Meigs, M.D. University of Pennsylvania, Philadelphia, 1871; a member of the Medical Society of the State of Pennsylvania, and Association of American Physicians; for several years chief of the Medical staff of the Pennsylvania Hospital; president of the Philadelphia College of Physicians from 1904 to 1906; widely known as a writer on medical subjects; died at his home in Philadelphia, January 1, aged 61.

Charles Martin Steele, M.D. University of Michigan Homeopathic Medical College, 1897; of Reno, Nev.; a member of the American Medical Association, and secretary of the Washoe County (Nev.) Medical Society; a member of the staff of the People's Hospital, Reno, Nev.; oculist and aurist to the Southern Pacific, Oregon Short Line and Nevada Central railroads; died January 6 after an operation for appendicitis, aged 48.

Richard Runyan Rogers, Jr., M.D. University of Pennsylvania, Philadelphia, 1882; for fifteen years physician of Mercer County, N. J.; major and surgeon of the National Guard of New Jersey and assigned to the Second Infantry; for two years a member of the staff of the New Jersey State Hospital, Trenton; died at his home in that city, January 2, aged 49.

Arthur Reitman, M.D. Wisconsin College of Physicians and Surgeons, Milwaukee, 1905; of Milwaukee; a member of the State Medical Society of Wisconsin; deputy coroner of Milwaukee County, who had been ill in St. Joseph's Hospital with typhoid fever; died in that institution, January 6, four hours after an operation for gangrene of the bladder, aged 33.

Thacher S. Hanchett, M.D. Bellevue Hospital Medical College, 1864; a member of the Connecticut State Medical Society; for forty-five years a practitioner of Torrington; first health officer of that city and later medical examiner until 1908; surgeon's mate in the Navy during the Civil War; died in the Norwich State Hospital, December 31, aged 73.

Edwin O. Thornhill, M.D. Medical College of Virginia, Richmond, 1903; a member of the American Medical Association; of Maben, W. Va.; aged 33; while attending an injured person in a drug store in Mullens, January 1, was shot and killed by one of the notorious Hatfields of Logan County, because he refused to issue a prescription for whiskey.

James X. Allen, M.D. Washington University, St. Louis, 1867; a member of the Utah State Medical Association; surgeon of Missouri Volunteers during the Civil War; medical director of the Grand Army of the Republic, Department of Utah, for several years; died at his home in Ogden, December 27, from angina pectoris, aged 81.

Frederick C. Heath, M.D. Queen's University, Kingston, Ont., 1886; aged 50; was found dead in his office in Chicago, January 9, from the effects of asphyxiation by gas. The case is reported to be one of suicide during despondency.

Levi H. Nichols (license, Vermont); for thirty-two years a practitioner of Stamford; died at his home, December 30, from cerebral hemorrhage, aged 68.

Joseph J. Hoffman, M.D. Medical College of Ohio, Cincinnati, 1903; of Orchard Park, N. Mex.; formerly of Cincinnati; resident physician to the Central Indiana State Hospital of Indianapolis, and assistant surgeon to the National Military Home, Dayton, O.; died in St. Mary's Hospital, Roswell, N. Mex., December 26, aged 31.

Charles Rice, M.D. University of Iowa, Iowa City, 1878; a member of the American Medical Association and National Association of Railway Surgeons; local surgeon at Smithland, Ia., of the Illinois Central System; health officer of Smithland and Little Sioux; died at his home in Smithland, January 1, aged 60.

William Clay Cardwell, M.D. University of Nashville, Tenn., 1894; Marion-Sims Medical College, St. Louis, 1898; a member of the American Medical Association, and a trustee of the Washington State Medical Association; of Colfax, Wash.; died in the Colfax Hospital, January 2, from lymphatic leukemia, aged 36.

Robert Fischer, M.D. Cleveland (O.) College of Physicians and Surgeons, 1897; a member of the Indiana State Medical Association; for five years supervisor of physical training and director of school hygiene in the Indianapolis Public Schools; died in the Norways Sanitarium, Indianapolis, January 6, aged 38.

Algernon Coolidge, M.D. Harvard Medical School, 1853; a member of the Massachusetts Medical Society; surgeon of volunteers during the Civil War; from 1868 to 1873 surgeon and laryngologist to the Massachusetts General Hospital; died at his home in Boston, January 5, from acute bronchitis, aged 81.

John Franklin Davis, M.D. Bellevue Hospital Medical College, 1874; a member of the Medical Society of the State of New York; for thirty-three years a customhouse official of New York City and appraiser of surgical goods; died at his home in Brooklyn, December 31, from cerebral hemorrhage, aged 59.

Marion Adell Howe Pugh, M.D. State University of Iowa, College of Homeopathic Medicine, Iowa City, 1900; formerly instructor of Drake University, Des Moines, and a teacher in the science department of the public schools in that city; died in a sanatorium in Colfax, Ia., December 30, aged 44.

Madison A. Ashley, M.D. Kentucky School of Medicine, Louisville, 1895; a member of the American Medical Association; a member of the board of health of Excelsior Springs, Mo.; died in a hospital in that city, December 31, six days after an operation for appendicitis, aged 44.

Francis M. Baker, M.D. Northwestern University Medical School, Chicago, 1893; of Fond du Lac; a member of the State Medical Society of Wisconsin; at one time lecturer in the Milwaukee Medical College; died in a hospital in Milwaukee, December 30, from leukemia, aged 44.

Andrew Hamil Read, M.D. Oglethorpe Medical College, Savannah, Ga., 1858; formerly an official of Fulton County, Ga.; a member of the Medical Association of the State of Alabama; died at the home of his daughter in Opelika, December 27, from cerebral hemorrhage, aged 75.

Alvin Rodney Smith, M.D. Ohio Medical Institute, Cincinnati, 1853; of Girard, Pa.; burgess of Girard for two terms; a member of the town council, board of education and health officer; died in St. Vincent's Hospital, Erie, December 19, after a surgical operation, aged 81.

Thomas F. McKey, M.D. University of Iowa, Iowa City, 1882; a member of the Minnesota State Medical Association; chief physician of the Wisconsin State Penitentiary, Waupun, for two years; died at his home in Albert Lea, December 31, from arteriosclerosis, aged 49.

Edward Hubbard Welch, M.D. Yale University, New Haven, Conn., 1876; a member of the American Medical Association; for many years surgeon in the National Guard of Connecticut; died at his home in Winsted, Conn., December 28, from cerebral hemorrhage, aged 59.

William Droien Collins, M.D. Harvard Medical School, 1866; a surgeon of volunteers during the Civil War; for twenty-eight years a practitioner of Haverhill, Mass.; died at his home in Cambridge, Mass., December 16, from senile debility, aged 71.

William H. Senderling, M.D. Jefferson Medical College, 1869; a member of the staff of St. Luke's Hospital, Philadelphia; died at his home, December 30, from heart disease, aged 64.

Joseph Sandy Dickinson, M.D. University of Louisville, Ky., 1849; formerly a member of the American Medical Association; for more than fifty years a practitioner of Trenton, Ky.; died at his home in that city, December 25, from nephritis, aged 84.

Henry P. Wherritt (license, Missouri); for twenty-three years a practitioner of Independence, Mo.; a member of the American Medical Association and a Confederate veteran; died at his home, December 29, from heart disease, aged 69.

William Thomas Whiting, Jr., M.D. Northwestern University Medical School, Chicago, 1910; of Lafayette, Colo.; aged 25; was instantly killed in a collision between his automobile and an interurban car near Louisville, Colo., January 2.

Garland Somers Wiley, M.D. University of Virginia, Charlottesville, 1903; formerly of Roanoke; who went to Brazil, South America, a year ago as a physician for a railway and mining company; died in Brazil, December 5, aged 32.

Gilbert Board Lawrence, M.D. New York University, New York City, 1852; a retired practitioner of Williamsburg, Brooklyn; died in the Home for Aged Men and Couples, New York City, January 5, from senile debility, aged 87.

Chauncey Cater Turner, M.D. Jefferson Medical College, 1909; a member of the visiting staff of the Wilkes-Barre City Hospital; died at the home of his brother in Wilkes-Barre, December 29, from cerebral hemorrhage, aged 32.

James Stephen McLaughlin, M.D. Dartmouth Medical School, Hanover, N. H., 1893; for several years a member of the staff of Noble Hospital, Westfield; died at his home in that city, January 2, from cerebral hemorrhage, aged 46.

William E. Gaver, M.D. University of Maryland, Baltimore, 1888; a member of the American Medical Association; of Mount Airy, Md.; died December 31, from heart disease, while making a professional call, aged 48.

Joseph F. Scott, M.D. Western Reserve University, Cleveland, 1887; a member of the West Virginia State Medical Association; died at his home in Medley, December 22, from cerebral hemorrhage, aged 54.

John A. Henning, M.D. Bennett Medical College, Chicago, 1880; for fifty-five years a practitioner; died at his home in Garnett, Kan.; December 30, from cerebral hemorrhage, aged 81.

Moses Louis Weil, M.D. Bellevue Hospital Medical College, 1889; a medical examiner of the New York Health Department; died at his home in New York City, January 3, aged 53.

Samuel Green Sewall, M.D. Boston University School of Medicine, 1880; a veteran of the Civil War; died at his home in New York City, December 29, from heart disease, aged 88.

Charles Hobart Pague, M.D. McGill University, Montreal, 1867; a surgeon of volunteers during the Civil War; died at his home in Chicago, January 10, from pneumonia, aged 69.

James Lovel Muncey, M.D. University of Maryland, Baltimore, 1892; of Pearisburg, Va.; was thrown from his buggy at Pembroke, December 29, and died an hour later, aged 45.

Quintus Cincinnatus Smith, M.D. University of Nashville, Tenn., 1868; a member of the American Medical Association; died at his home in San Diego, Cal., October 27, aged 69.

Eugene M. Draper, M.D. Albany (N. Y.) Medical College, 1873; for many years a practitioner of Ilion, N. Y.; died at his home in Pasadena, Cal., December 28, aged 58.

Edwin E. Campbell, Jr., M.D. Syracuse (N. Y.) University, 1909; died at his home in Alexandria Bay, N. Y., December 29, from typhoid fever, aged 28.

G. W. Jones, M.D. Columbus (O.) Medical College, 1879; of Quaker City, O.; was found dead in his stable, December 27, from heart disease, aged 61.

Charles M. Galloway, M.D. Memphis Hospital Medical College, 1898; died at his home in Fort Worth, Tex., January 1, from pneumonia, aged 40.

John L. Blair, M.D. University of Maryland, Baltimore, 1868; died at his home in Mercersburg, Pa., December 31, aged 66.

John P. Bruce, M.D. Rush Medical College, 1902; died at his home in Chicago, December 24, from pneumonia, aged 37.

Abner Martin, M.D. Bellevue Hospital Medical College, 1864; died at his home near Ashland, Mo., January 3, aged 77.

Ralph Nevin Gordon, M.D. Seattle, Wash., noted as dead in THE JOURNAL of September 2, 1911, is not dead.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

THE J. B. L. CASCADE TREATMENT

A Fraudulently Exploited Device Sold by Those Who Deal in the Ideal Sight Restorer

Many inquiries have been received relative to the "J. B. L. Cascade Treatment" and its exploiter, Dr. Chas. A. Tyrrell, an eclectic physician of New York City. The J. B. L. ("Joy-Beauty-Life") Cascade is a device sold by Tyrrell for the administration of rectal enemas. Tyrrell, it seems, has improved—commercially—on the propaganda started many years ago by Wilford Hall. Hall, it will be remembered, declared that all the ills of the flesh are due to the fact that people do not make a practice of flushing their colons. Tyrrell, however, goes farther than Wilford Hall; instead of merely selling a book telling of the wonderful results to be obtained from rectal enemas, Tyrrell also sells an appliance for giving the injections.

This appliance is said to be "the only thing of the kind ever specially designed for the purpose." After advancing the proposition that apoplexy, consumption, Bright's disease, syphilis and cancers "all have their origin in the colon," Tyrrell says:

"Typhoid fever and appendicitis may positively be cured and absolutely prevented by the 'J. B. L. Cascade' treatment."

According to Tyrrell, "there is *only one disease*" and more important still "there is *only one cause for disease*, and that is auto-intoxication." Of course, for this "only cause" Tyrrell has a "complete system of rational treatment" which consists of his syringe and stick of soap and his "celebrated 'J. B. L. Antiseptic Tonic'", which is supposed to be put in the water that is to be injected. So "complete" and so "rational" is Tyrrell's "system" that by it "anyone with ordinary intelligence" is able "to treat successfully any form of disease, that is curable, without the expense of calling a physician."

Tyrrell reaches his victims by methods usual to the medical faker—advertising and follow-up letters. With his letter, he sends out a printed leaflet in which he details "Our Phenomenal Triple Offer for This Month Only." Those not familiar with the methods of mail-order fakers might believe that such an offer was only made once. Our files disprove this as we have slips making this "phenomenal offer"—"for this month only"—for May, 1910; September, 1910; December, 1910; March, 1911; September, 1911; October, 1911; December, 1911; January, 1912, and other dates. Tyrrell also sends out the inevitable diagnosis blank with the offer of free advice to those who will fill it out and return it.

Nor is the J. B. L. Cascade the only piece of pseudomedical claptrap in which Tyrrell is financially interested. He also sells the "Ideal Sight Restorer," a piece of tubing with a bulb attached that is supposed to cure most eye ills. The Ideal Sight Restorer "cures not only the refractive errors of the eye—nearsight, farsight, oldsight and astigmatism—but also such dreaded diseases as cataract, glaucoma, cross-eye and paralytic blindness." The falseness of such claims as these is equaled only by the disasters that may result from the use of an appliance of this sort in certain diseased conditions of the eye.

As in the case of the J. B. L. Cascade—and, for that matter, that of any other medical fraud—plenty of testimonials are forthcoming to prove the efficacy of the thing exploited. On one page of the booklet sent out by the Ideal Company, which is the name under which Tyrrell sells the Ideal Sight Restorer, there appears what the company calls "an unprejudiced journalistic opinion" from the *United States Health Reports*. This publication was a fraudulent sheet that sold editorial commendation to any quack who would pay the price. Willard H. Morse, M.D., of Westfield, N. J., who calls himself a "consulting chemist" and "Director Iamatological Bureau" is quoted as testifying that the "Ideal Sight Restorer will absolutely restore sight and render spectacles useless." This testimony carries little weight to those who know that Morse is a professional testimonial writer who holds a "fellowship" in that serio-comic fraudulent organization the "Society of Science, Letters and Art," of London. The fellowships cost $5.00.

Tyrrell is also "editor-in-chief" of a monthly magazine, *Health*. The associate editor of *Health* is C. S. Carr, Peruna's advertising man and member of the advisory board of the "National League for Medical Freedom." The advertising pages of *Health* are devoted largely to the "Ideal Sight Restorer," the "J. B. L. Cascade" and C. S. Carr's "Tissue Tablets." In addition, we find such frauds as the Thatcher Magnetic Shield, the Magic Foot Drafts, Van Vleck Pile Cure, the Osteopather, etc.

It is unnecessary to tell physicians that the claims made by Tyrrell for his "J. B. L. Cascade" are as silly as they are false; it is equally unnecessary to tell them that the indiscriminate use of rectal enemas is not only harmful but may be dangerous. Unfortunately, the public does not realize the absurdity of Tyrrell's propositions nor does it comprehend the dangers attendant on them.

Correspondence

Tolerance of Infant to Codein

To the Editor:—An abstract on tolerance of infants to morphin in THE JOURNAL, September 9, p. 935, leads me to report the following experience: Six ¼-grain codein tablets were given the nurse, to be used in case of severe afterpains. None of these were used, but six weeks later the mother gave the child one tablet while being in town shopping and the child was quiet during the rest of the day and during a 16-mile ride home. One week later the child was again cross and received another tablet. I was called because they could not wake the child. It took me eighteen hours to do it; strychnin hypodermically (1/60 grain) and artificial respiration were used. I was unable to find out at that time what had been given the child, but two weeks later, after going through the same experience, I found out. I think the fact that the mother dropped part of the first tablet saved the child's life. In the article referred to a case is mentioned in which the child received twenty times the average dose for the age. I believe the child in my case received fifty times the average dose of codein. This must have been a case of extreme tolerance (or habit).

J. B. KINNE, Aberdeen, Wash.

The Baby-Tents of Chicago

To the Editor:—I have read with interest the article of Dr. Frank W. Allin on the baby-tent in THE JOURNAL (Dec. 30, 1911, p. 2127). He states that this idea "originated in Chicago" and has since spread to a number of cities.

I am particularly interested in the success of the baby-tent, here and elsewhere, in reducing the infant mortality-rate in the hot summer months in the poor and crowded districts of the city, for which it was established. The statistics of a single tent are indisputable evidence of their good work. This is particularly gratifying to me, as I happen to be the one with whom the neighborhood baby-tent idea originated. I established the first tent with the financial help of the Chicago Relief and Aid Society.

Dr. Allin kindly recorded this in an article which he read before the Chicago Medical Society and which was published in the *Illinois Medical Journal*, April, 1910, p. 423, under the title, "The Baby-Tent Idea."

In view of the fact that the baby-tent idea has proved to be an important factor in the saving of infants' lives, in which a personal pride on my part, I think, is pardonable, I ask that you publish this letter in THE JOURNAL.

WILLIAM J. BUTLER, A.M., M.D., Chicago.

The Army Canteen

To the Editor:—Referring to the letter of Colonel L. M. Maus, Medical Corps, in THE JOURNAL, Jan. 13, 1912, I desire to say that however widely his opinion on the subject of the canteen may differ from those of the majority of army officers or his statements from what are believed to be the facts in the case, it is only proposed here to comment on those which purport to be drawn from the vital statistics and reports of this office.

Much space would be required to point out the inaccuracies contained in his articles on the subject of "The Beerless Canteen" in the *Continent*, Dec. 7, 1911, and in THE JOURNAL of the American Medical Association, Jan. 13, 1912, so it need only be noted at this time that the total sick rates and constantly sick or non-effective rates of an army depend on a great number of more or less important factors, such as infectious diseases, skin diseases, wounds, broken legs and sore feet, which have no connection whatever with the use of alcohol or its sale on military reservations. The absurdity of comparing the total admission rate of a long past period such as 1867-1880, when sanitary science was in its infancy, with that of the last decade is obvious, especially when no mention is made of the fact that between the two came the canteen period 1890 to 1897, which had better health rates than the prohibition period, 1881-1885, or that of 1901-1910 for the Army in the United States, (the abnormal years of war and reorganization, 1898-1900, being omitted).

The statistics of alcoholism and venereal diseases, however, have a real bearing on the question and as the relation between the two vices is generally recognized by physicians and sociologists some discussion of these rates for the Army may be profitable.

The following tables give the accurate statistics for the periods referred to in Colonel Maus' article:

ADMISSION RATE PER 1,000 FOR ALCOHOLISM, UNITED STATES ONLY

From 1867-1880	48	No prohibition.
From 1881-1885	62	Prohibition period.
From 1886-1889	44	No prohibition.
From 1890-1897	34	Canteen, beer only.
From 1901-1910	28	Prohibition period.

ADMISSION RATE PER 1,000 FOR VENEREAL DISEASES, UNITED STATES ONLY

From 1867-1880	124	No prohibition.
From 1881-1885	82	Prohibition period.
From 1886-1889	78	No prohibition.
From 1890-1897	77	Canteen, beer only.
From 1901-1910 (corrected)	149	Prohibition period.

NOTE: Exceptional years of war and reorganization, 1898-1900, omitted.

Venereal Diseases.—The records of all the great armies of the world, except our own, show for the last three decades a steadily descending curve of incidence for these diseases. With the American Army the rate was fairly uniform for a number of years prior to the Spanish War, averaging for the decade preceding 1898, 78 per 1,000, and for the decade, 1878-1887, 84 per 1,000. The rate for the United States leaped, however, from 81 in 1898 to 138 in 1899, and 155 in 1900, and it has remained not far from 150 during the succeeding years, after correction is made for readmissions of the same case. It is now the most important of all causes of physical disability. Colonel Maus tells us that this phenomenal increase is rather apparent than real, and is due to the fact that now rigid examination of all the men is made weekly, or twice monthly, which brings the rate up to the present figures. Unfortunately, this "most intelligent explanation" has no real basis of fact. The truth is that the physical examinations followed the great increase in the venereal rates and did not produce them, both in the tropics and in the United States. In the latter the curve of incidence took its abrupt and enormous rise ten years before the physical examinations began to be held at any considerable number of posts in the United States, being only one of a series of measures recommended by the surgeon-general in his circular letter of Jan. 25, 1909, for the reduction of venereal diseases.

This office is not aware of any reports or figures to support the assertion "that less than 33 per cent. of the venereal cases before 1901 were reported", or that "the true venereal rate would have exceeded 255 per 1,000 if all the cases had been taken up;" and such a statement is apparently a mere guess without statistical foundation.

Alcoholism, which was in the early history of the Army during the first half of the last century a very important cause of morbidity and death, and the cause of much solicitude to medical officers, became in its later decades, with the growth of temperance in the Army, of minor importance in its effect on the sick report, except by its relation to the much more serious question, from a sanitary standpoint, of venereal diseases. The alcoholic rate rose from 27 in 1867 steadily to 1876 when it reached its highest point, 72 per 1,000. For the next seven years it fluctuated between 60 and 70, being at 69 in the years 1882-1883, in spite of the fact that these were prohibition years. From this point the rates fell steadily through fourteen years to the year of the Spanish War in which it was only sixteen, the lowest rate on record. This was followed by a rise during the exceptional years of 1899 and 1900 to the rate of 26 in 1901, followed by three years when it remained near this figure and then made a further rise for three years, reaching 36 in 1907. The rise in 1899-1901 was synchronous with the enormous increase in venereal rates, and it is difficult to escape the conclusion that there was some connection between the two. The probable explanation of both seems to be that in the spring of 1899 the great majority of the old disciplined professional soldiers of the army were given their discharge and were replaced by recruits. It is well known that recruits are more subject to sickness of all sorts and especially to venereal diseases than trained soldiers. The greenness of the army in 1899 must, therefore, be credited as an important factor in this rise, and it will be further observed that the fluctuations in the alcoholic rate which have occurred since have been in periods of three years, which correspond with the expiration of the three year enlistment periods.

It will be observed that the improvement in the alcoholic rate began before the establishment of the canteen and was continued during most of the canteen period. It is believed that this fall corresponds to the general progress of temperance in the United States, and that it would have been sustained but for the undoubtedly injurious effect of abolition of the beer privilege in the canteen, which destroyed to a considerable extent the attractiveness of the soldier's club, and compelled him to go outside the limits of the military post for amusement. In this way he is tempted to drink distilled liquors to excess in place of mild fermented liquors in moderation, and is at the same time brought into contact with disreputable companions of both sexes, with unfortunate consequences to his health and morals, as shown by the high venereal rates of the last prohibition period.

Statistics are like stones taken from the quarry and piled by the roadside. The contentious may use them as missiles to hurl at an adversary, or the mischievous to break windows, but the honest laborer will employ them only for the purpose for which they are intended, to pave the difficult road which leads toward the truth.

GEORGE H. TORNEY,
Surgeon-General, U. S. Army.

To the Editor:—Dr. W. W. Keen pleads from the physician's standpoint for the restoration of the army canteen. I submit some facts, and views which are as honestly and earnestly held, but which do not accord with Dr. Keen's position on this important question.

Dr. Keen is to be commended for his strong position on social total abstinence, and when he says that he would nail up the doors of every saloon, and put on them a placard, "To rent for some decent business", I am with him heart and soul. But then, with only a semicolon between, he says, "and yet I am in favor of allowing beer to be sold to the soldiers"!

Now I am led to believe that the canteen is simply a vicious saloon run by the government. Its results are the same as those of all saloons—drunkenness, disease and crime. It has been proved that more than one murder has occurred right in

the army posts, as the direct result of drink bought over the canteen bar from the special official military bartenders. Can Dr. Keen prove that "beer" never had any part in these affairs? He pleads for beer—or the so-called Bartholdt bill does. And he defends it from his standpoint as a physician, especially because he maintains that without the canteen immorality in the ranks of the army is on the increase, with all its truly deplorable results. But as to his argument that the canteen keeps the soldiers from the worse saloons and brothels outside, we are told that those places always flourished very near to the army posts during all the canteen years, and that the results of abolishing the canteen have been good, instead of bad. The burden of proof to the contrary rests on those who petition Congress to pass the Bartholdt bill. The fact—if it is a fact—that certain diseases are on the increase in the army, is not proved to be simply and solely due to the abolishing of the canteen.

It is a well-known and established fact that selected normal, active men, especially husbands, do not seek or consort with prostitutes, unless their animal passions are first aroused by stimulating drugs and intoxicants. Therefore, as a remedy for the horrible conditions which Dr. Keen describes, and quotes authority to prove:

1. Let the United States Army clean camp, inside as well as outside. If illicit saloons, dives and speak-easies exist and thrive around Uncle Sam's police stations to that extent, in the name of God and for the honor of the army of humanity and expansion, let these evil places be put to rout. If they are illegal places of moral degradation such as pictured, it certainly is within the power, and would be much easier for the War Department to clean them up, than it would if they became legal places of moral degradation.

2. Let the War Department establish all military posts in places where the liquor traffic has been outlawed; there are plenty of them scattered at strategic points throughout the United States. Then it will be easy for General Wood to keep his camps clean.

3. Let the President spend about fifteen minutes under his well-defined authority, in transmitting an executive order to the Department of the Interior, directing the Commissioner of Internal Revenue to stop issuing permits to brewers and distillers to sell intoxicating liquors in states which have outlawed such sale, so that the general government no longer shall connive at the breaking of the solemnly enacted laws of a coordinate branch. And let the War Department cooperate with the Interior Department to put an end to this species of anarchy. Or, in other words, while the patient yet retains good vitality, let the skilled humane surgeon cut out the last tissue of cancerous growth.

It is my personal conviction that the liquor business is an evil thing and that it is wrong in principle for the government to engage in any undertaking that inevitably weakens and debases the men who are sworn to support and defend it, and it is for this reason that I reply to Dr. Keen.

JOHN G. WILSON, Montrose, Pa.

Cook Versus Peary

To the Editor:—Dr. Cook lectured at New Kensington, Pa., Jan. 3, 1912, advertising previously in one of the local papers that "Dr. Cook himself will answer the claims of Peary and the members of the Peary party".

It is with the greatest reluctance that I am compelled to answer and perhaps question the veracity of an explorer who is a member of my profession. Dr. Cook, however, leaves me no choice in the matter, since he lectured in the Columbus Theater, across the street from my office, and gives to the press a distorted version of Rudolph Franke's reception on the *Roosevelt* at Etah. The matter is extremely distasteful, but in justice to Admiral Peary, myself and the officers of the *Roosevelt* I am compelled to deny Dr. Cook's insinuations that his companion, Rudolph Franke, afflicted with scurvy and, applying on the *Roosevelt* at Etah for medical attention and food, was refused, until Commander Peary had extorted terms discreditable to all concerned.

I have always regarded Dr. Cook with the kindliest feeling and for the honor of my profession had hoped that Dr. Cook might have vindicated his veracity. I trust that he will correct the version of Franke's reception on the *Roosevelt* written in his book, spoken from the platform and illustrated throughout the country by moving pictures.

JOHN W. GOODSELL, New Kensington, Pa.,
Surgeon Peary Arctic Expedition, 1908-1909.

Mounting Pathologic Specimens

To the Editor:—I wish to give a few suggestions to those mounting gross pathologic specimens. In putting up a great many specimens in gelatin, I always had the trouble of air-bubbles forming, as well as discoloration of the gelatin and sometimes of the specimens themselves. Not only has the method these faults but it is also expensive. If one wants to freshen up gelatin-mounted specimens, it is necessary to break the seal and take off the gelatin and remount them.

The method I now use is very cheap; in fact, each specimen costs about 10 cents and no special jars or dishes are required. The specimens are first prepared by Kaiserling's method, which is as follows:

1. Fixation for one to five days in:

Formaldehyd	200 c.c.
Water	1,000 c.c.
Nitrate of potassium	15 gm.
Acetate of potassium	30 gm.

Change the position of the specimen frequently. The time of fixation varies with the tissue or organ and size of the specimen.

2. Drain and place in 80 per cent. alcohol for one to six hours, and then in 95 per cent. alcohol for one to two hours, to restore the color, which is somewhat affected in the fixing solution.

3. Preserve in:

Acetate of potassium	200 gm.
Glycerin	400 c.c.
Water	2,000 c.c.

Since exposure to light reduces the color contrasts, the specimen should be prepared and kept in the dark.—(Delafield and Prudden: Handbook of Pathologic Anatomy, page 61.)

The specimens are then mounted on celluloid. I use the kind of celluloid of which automobile curtains are made. The specimens of intestines and appendices and soft tissue may be sewed on to the celluloid and mounted in ordinary glass preserving jars. The jars are then filled with No. 3 Kaiserling.

Another advantage of this method is that it gives one an opportunity to cut out that part of the celluloid which might distort the specimens, which cannot be done if glass is used. Under the specimens white lead may be used to put on the diagnosis. The jar is filled with No. 3 Kaiserling, which has been filtered and is perfectly clear. By submerging the jar in a larger vessel of the Kaiserling solution it may be filled without any air-bubbles. This makes a very pretty mounting as the celluloid is invisible and the solution is as clear as crystal.

The specimens may be taken out at any time and refreshened in alcohol; there are no labels on the bottle to be washed off; heat or cold will not affect them and they may be mounted very quickly.

HARRY M. WEGEFORTH, M.D., San Diego, Cal.

Condensed Milk in Nevada

To the Editor:—In the discussion of Dr. Neff's article on "Recent Experiences in the Artificial Feeding of One Hundred Infants" (THE JOURNAL, Dec. 23, 1911, p. 2068), Dr. R. B. Tubbs, of Council Bluffs, Ia., says that he "cannot see why it is any more legitimate for us to give condensed milk than it is to give proprietary medicines." I wish to ask Dr. Tubbs what he would advise using in place of condensed milk out here in the Nevada deserts, 65 miles from railroad and 60 miles from the nearest milk cow or goat. I have no startling results to record from its use, but the babies under my care are holding their own through careful attention to dilutions, time of feeding, etc.

E. N. ROBERTS, Wonder, Nev.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SALVARSAN—THE JARISH-HERXHEIMER REACTION—ARSACETIN

To the Editor:—1. What is meant by the Jarish-Herxheimer reaction? 2. What is arsacetin, and what is the percentage of arsenic in it? 3. Can you give me approximately the number of cases in which salvarsan has been used in this country and the number of deaths that resulted from its use? 4. Please give also the number of cases resulting in amaurosis. 5. What is the general opinion up to the present time as to the effectiveness of salvarsan in the cure of syphilis? WILLIAM R. ROGERS, Bristol, Va.-Tenn.

ANSWER.—1. The Jarish-Herxheimer reaction is an increase of the symptoms which sometimes is found to follow too small a dose of a remedy, as for instance, the increase of a rash in syphilis after treatment with insufficient doses of mercury or salvarsan.

2. Arsacetin is sodium acetyl arsanilate (See N. N. R., Ed. 1911, p. 341). It contains approximately 21 per cent of arsenic.

3. No.

4. We have no knowledge of any case of syphilis in this country in which amaurosis has been positively shown to be due to salvarsan.

5. The remedy is believed to be of great value in the treatment of syphilis, but its use is too recent for a conclusive opinion to be formed. We suggest that our correspondent study the articles on the subject which have been published in THE JOURNAL and form his own opinion. Among these articles are the following:

Keidel, A., and Geraghty, J. T.: The Value of the Wassermann Reaction and of Salvarsan, THE JOURNAL, Nov. 18, 1911, p. 1659.

Montgomery, D. W.: The Disadvantages Incident to the Administration of Salvarsan, THE JOURNAL, Nov. 18, 1911, p. 1661.

Hirschfelder, J. O.: The Use of Salvarsan, THE JOURNAL, Nov. 18, 1911, p. 1667.

Fox, H., and Trimble, W. B.: Eight Months' Experience with Salvarsan at the New York Skin and Cancer Hospital, THE JOURNAL, Nov. 18, 1911, p. 1675.

King, P. M., and Crowell, A. J.: Pellagra Treated with Salvarsan, THE JOURNAL, Nov. 18, 1911, p. 1687.

McLester, J. S.: Salvarsan, THE JOURNAL, June 24, 1911, p. 1877.

Cole, H. P., and Winthrop, G. J.: The Status of Salvarsan in Pellagra, Based on the Reports of Twenty-One Collected Cases, THE JOURNAL, June 17, 1911, p. 1794.

Reasoner, M. A.: A Simple Technic for Salvarsan Injection, THE JOURNAL, June 17, 1911, p. 1804.

Meltzer, S. J.: The Present Status of Therapeutics and the Significance of Salvarsan, THE JOURNAL, June 10, 1911, p. 1709.

Schamberg, J. F.: The Cause of Inflammation of Cranial Nerves After the Use of Salvarsan, THE JOURNAL, May 20, 1911, p. 1433.

McKenna, C. H.: A Report on the Therapeutic Efficiency of Salvarsan, THE JOURNAL, March 25, 1911, p. 801.

Fox, H., and Trimble, W. B.: Experience with Salvarsan, THE JOURNAL, March 4, 1911, p. 650.

Sutton, R. L.: Localized Edema in the Lumbar Region Following the Use of Salvarsan, THE JOURNAL, Feb. 4, 1911, p. 344.

Corbus, B. C.: Observations on Twenty-Eight Patients Treated with Salvarsan, THE JOURNAL, Feb. 25, 1911, p. 566.

Nichols, H. J.: Salvarsan and Sodium Cacodylate, THE JOURNAL, Feb. 18, 1911, p. 492.

Montgomery, D. W.: The Administration of Salvarsan, THE JOURNAL, Feb. 18, 1911, p. 501.

Ormsby, O. S.: A Group of Syphilitic Patients Treated with Salvarsan, THE JOURNAL, Feb. 18, 1911, p. 504.

Advertising Salvarsan to the Public, THE JOURNAL, Feb. 11, 1911, p. 436.

Sutton, R. L.: Localized Edema in the Lumbar Region Following the Use of Salvarsan, THE JOURNAL, Feb. 4, 1911, p. 344.

Marshall, M.: A Report of Six Cases of Syphilis Treated with Salvarsan, THE JOURNAL, Jan. 21, 1911, p. 177.

Fordyce, J. A.: The Modern Treatment of Syphilis, with Reference to the Recent Synthetic Preparations, THE JOURNAL, Jan. 21, 1911, p. 186.

Pusey, W. A.: The Situation as Regards Salvarsan, THE JOURNAL, Jan. 14, 1911, p. 118.

Puckner, W. A., and Hilpert, W. S.: The Chemical Properties of Salvarsan, THE JOURNAL, Dec. 31, 1910, p. 2314.

Elsner, H. L.: The New Treatment of Syphilis, THE JOURNAL, Dec. 10, 1910, p. 2052.

Marks, L. H.: Ehrlich's Biochemical Theory, Its Conception and Application, THE JOURNAL, Dec. 3, 1910, p. 1974.

Corbus, B. C.: The Value of Ehrlich's New Discovery, "606," THE JOURNAL, Oct. 22, 1910, p. 1470.

Nichols, J. H., and Fordyce, J. A.: The Treatment of Syphilis with Ehrlich's "606," THE JOURNAL, Oct. 1, 1910, p. 1171.

"PRESCRIPTION NONSENSE"

To the Editor:—The most timely article in THE JOURNAL (Jan. 6, 1912, p. 34), under the above title would possess additional value if it were more correct in a few details. Permit me an anticriticism. To use the author's own expression, it is the object of this to urge an analytical spirit of—criticisms.

Criticism of Matthes' Prescription.—1. An infusion of rhubarb is not "too disagreeable to administer to anyone." It is, after all, a matter of taste. Many patients do not object to powdered rhubarb, particularly when its taste is corrected by the addition of magnesia (Hufelands' *Kinderpulver*). Europeans are rather used to it and by the way, some are nauseated by the here much-favored odor and taste of gaultheria. The custom of prescribing rhubarb in superacidity (and ulcer) is very properly based on its aperient effect. Atony of the colon, colitis mucosa and constipation are the most frequent complications (if not etiologic factors) in superacidity and the benefit of treatment by enemas of oil too well known to require further proof. Rheum acts on the colon only. (Querber, on the findings of *x*-ray observations by Magnus and Padtberg, *München. med. Wchnschr.*, 1911, p. 2250.)

2. That oil of peppermint causes the outpouring of gastric juice is still *sub judice*, and the healing power of menthol on a gastric ulcer just as well. But it has a local anesthetic action.

3. The lack of more exact directions in this and other prescriptions should not excite the ire of the critic. The authors mentioned probably write for graduates and not for freshmen, thus leaving room for individualizing.

Criticism of Ewald's Prescription.—4. There is a remarkable difference between sodium and potassium salts and between their carbonates and bicarbonates. Sodium carbonate contains 15.38 per cent. carbon dioxid and the bicarbonate 52.39 per cent., potassium carbonate 31.88 per cent. carbon dioxid and its bicarbonate 44 per cent. The production of a moderate amount of carbon dioxid in the stomach will cause the escape of other fermentation gases with the eructations from the carbon dioxid, while a very large volume of this gas may bring on the danger of a perforation. So there seems to be some little sense in this prescription after all.

5. "Any sugar . . . is better not given to a patient in whom one is attempting to reduce hyperacidity"? Look up Howell ("Text-Book of Physiology," Ed. 4, p. 744), Friedländer (in Osler's "Modern Medicine," v. 119), Anders ("Practice," Ed. 10, p. 807), Fleischer ("Magen und Darmkrankheiten," p. 932), Strauss ("Vorlesungen über Diät," etc., p. 32), Winternitz (in von Mering's "Lehrbuch der inneren Medizin," p. 440), to which may be added that Lenhartz, in his "Diet in Gastric Ulcer," recommends 20 gm. cane-sugar from the fourth day, rising to 50 gm. on the twelfth day. When Sayler (in Hare's "Modern Treatment," ii, 306) says that "excessive (sic) indulgence in sweet foods appears to be undesirable," etc., it might be mentioned that sugars in higher concentration are absorbed by the stomach (Howell).

As to the objections against belladonna in various forms, instead of the alkaloid atropin, there is still some dispute, just as opium has different virtues from morphin and digitalis from the various preparations obtained from it. I must confess, however, that I prefer the alkaloids where the weighing by the apothecary is reliable.

The objection to Cohnheim's prescription is somewhat of a surprise. There can be no question that an emulsion is meant, for it would form by itself on slight agitation, and that the medicine should be delivered with the yolk of an egg floating in the bottle sounds preposterous. But perhaps the greatest surprise is furnished by the statement that "the oil of sweet almonds certainly is not a specific treatment for ulcer of the stomach." If not a specific in the strictest sense of the word, it is certainly one of the most useful factors in treatment of superacidity (or hyperchlorhydria). That oils, emulsions (cream) and liquid fats virtually inhibit the secretion of hydrochloric acid is so widely known and this fact so very generally considered in the diet and treatment of superacidity that it would seem quite superfluous to prove it by quoting modern authors.

6. The translation of Cohnheim's prescription is given: "Tincturae","Olei", then "Vitellum", and "Aquam", first genitives, then accusatives. Is not this somewhat careless Latin?

Am I fault-finding? I hope not, for most of the points in the article are well taken and deserve closest attention.

GEORGE RICHTER, St. Louis.

ANSWER.—1. THE JOURNAL is primarily for the practitioners of the United States, and, even if Europeans are fond of the infusion of rhubarb, we believe that most American patients would find it very disagreeable. It seems hardly worth while for the sake of a laxative to take any chance of causing nausea and vomiting in a patient who has ulcer of the stomach. Certainly our correspondent does not believe that rhubarb is a curative treatment for ulcer of the stomach. If rhubarb is desired for action on the lower intestine, it certainly can be given in a much pleasanter manner.

2. Our correspondent should note that the article on prescription nonsense was not written to advise or discuss the treatment of gastric ulcer, but was simply to discuss the prescriptions quoted and advised to be used in this condition; hence the action of peppermint in stopping pain or healing an ulcer of the stomach, or the action of oil in inhibiting gastric acidity and furnishing nutrition was not a matter discussed.

3. We take issue with our correspondent as to the indefinite advice given both in therapeutic articles, and also as directions for a prescription, leaving so much to the reader to decide that the advice given becomes almost negligible. A prescription may be valuable enough to quote and be valuable in its proper use, yet it may become valueless or perhaps harmful by improper use. Therefore, exact directions must be given, or else the prescription should not be quoted.

4. The carbonates of sodium and potassium are distinctly more irritant than the bicarbonates, and good, definite reasons must be shown why a carbonate should be used instead of a bicarbonate. There is no difference in the action between sodium carbonate and bicarbonate, on the one hand, and a potassium carbonate and bicarbonate, on the other, except that the sodium salt is more of an antacid in the stomach. If it is thought that sodium bicarbonate would cause the formation of too much carbon-dioxid gas, certainly it should not be given, and, as suggested at the end of the article on "Prescription Nonsense," a milk of magnesia should be substituted. As a matter of fact, sodium bicarbonate in any ordinary dosage could not cause sufficient gas to produce perforation, unless an undissolved and not yet effervesced Seidlitz powder was administered. Much gastric indigestion will cause more gas formation than any one single ordinary dose of bicarbonate of sodium can.

5. There is no question of the value of sugar in any instance of starvation, and if a patient with gastric ulcer is treated by starvation methods, sugar is one of the necessary nutriments; but it had much better be given per rectum, and glucose by the drop method by watery solution into the colon seems to be the most valuable nutriment during the attempt to heal a gastric ulcer.

In spite of all the references and all the discussion concerning the value of sugar in the stomach, it is valuable simply because sugar is needed as a nutrient and is a most readily absorbed and easily utilized nutriment. It is not necessarily a treatment of gastric ulcer, and sugar will often cause more of the "dangerous gas formation" than could possibly be made by sodium bicarbonate.

6. The Latin in Cohnheim's prescription is absolutely correct. Translated it is: Take 75 grains (accusative) of tincture of belladonna (genitive), 1 fluidram (accusative) of oil of sweet almond (genitive), the yolk (accusative) of one egg, distilled water (accusative) up to 6 ounces and 5 drams. The constructions here criticized were fully explained in THE JOURNAL, Nov. 25, 1911, p. 1782. The amounts are copied as they were originally written, and for them we are not responsible. The sign "fl." for fluid should be placed before the ounces of oil and the 6 ounces of water.

THE ISLET THEORY OF DIABETES

To the Editor:—In an editorial entitled "The Islet Theory of Diabetes," in THE JOURNAL, Dec. 23, 1911, p. 2086, the statement is made that "lesions of the islands of Langerhans might exist without the presence of glycosuria." Will you kindly give me the authority for this statement, with reference? I have looked in vain for such cases.

N. B. FOSTER, New York.

ANSWER.—The number of islands in the pancreas is very great, so that it is quite possible to have many of them showing pathologic changes, yet with a sufficient number remaining to carry on any function that the islands may have. Many pathologists who have made systematic studies of the structure of the pancreas have described lesions in the islands of Langerhans in persons who have shown neither glycosuria or other evidences of diabetes, but on account of the large "factor of safety" provided by the excessive number of islands this fact has no particular significance in relation to the islet theory of diabetes. As for specific references we quote the following: Herxheimer (*Verhandl. deutsch. pathol. Gesellsch.*, 1909, xiii, 279) says: "I have observed in a large series of cases in which there was no question of diabetes, an irregular sclerosis of the connective tissue, affecting also the interacinous connective tissue, in which the islands were especially sclerotic. Some were cases of secondary cancer of the pancreas, some of liver cirrhosis with also connective tissue increase in the pancreas. Although I myself have previously described cases in which typical cirrhosis of the pancreas with cirrhosis of the islands occurred in diabetes, yet there also very frequently occurs sclerosis of the islands without diabetes, as the above-mentioned observations show." In the discussion of this article von Hansemann (*ibid.*, p. 285) says: "There is found fibrous infiltration of the islands without diabetes;" and Herxheimer again says (p. 286): "I have drawn no conclusions either for or against the island theory from the fact that I have found intralobular connective tissue increase with sclerosis of the islands." Saltykow (*Corr. Bl. f. Schweiz. Aerzte*, 1909, xxxix, 625) who supports the islet theory states, however, that in twenty-one pancreases from persons without diabetes he found seven with an interacinar sclerosis, and that "in four cases the islands were slightly (*unbedeutende*) sclerotic." In a man aged 88, with severe arteriosclerosis, he found "a marked hyaline degeneration of some groups of islands." Undoubtedly thorough search of the literature would bring to light many more such reports, but the above will perhaps satisfy our correspondent's query. Of course the occasional finding of diseased islands without diabetes does not signify anything against the islet theory of diabetes, any more than the presence of occasional fibroid glomerules in the kidney without albuminuria would refute the existence of glomerular nephritis.

ATHLETICS IN THE NAVY

To the Editor:—Under the heading "Effect of Strenuous Athletics in the Navy" (Jan. 6, 1912, p. 49), THE JOURNAL says: "The physical records of 625 former athletes of the naval academy classes from 1891 to 1911 were examined to determine the bearing of early overtraining on physical efficiency in after life." Out of 625 athletes there were twenty-one fatalities; out of the 604 remaining in the service 198 were partially disabled. Of these 198, numbers and details are given of the ways in which they were affected. You then say: "The figures quoted constitute a severe arraignment of strenuous competitive athletics as carried on in our schools and universities," etc.

For my part I cannot see that they constitute a severe arraignment at all. To do so they would have to be compared to the total number of students that did not take part in "strenuous competitive athletics." I presume that you would find among these some who were not perfect. Who is wise enough to differentiate between the two? We have so many means by which a person's vascular system may be affected; so many factors contributing to Bright's disease, tuberculosis, neurasthenia and appendicitis that it is hard to see how these troubles arising in after life could be traced back to the time of athletic activity with any satisfaction. I take for granted that the joint troubles and the hernias were caused at the time the persons were actively engaged and, of course, these can be easily understood. Taking for granted that the fifty unclassified cases were of too slight a nature to amount to anything, we find that 477 of the 625 are fit for service even after having indulged in "strenuous competitive athletics."

It seems to me only fair that we should go into the matter much more fully before we decide to cut out the games which are the most popular with the "red-blooded" type of manhood.

A. H. SHARP, Germantown, Pa.

ANSWER.—It seems to us that the point raised by our correspondent is not well taken. This was a study by the Navy Department of a class of men under exact observation for years, with a conclusion that strenuous competitive athletics are highly undesirable. The editorial simply stated the facts as given in this report, according to which the deaths and injuries were the direct result of strenuous athletics. The conclusions given in the editorial rest on the authority of the author of the report cited.

THE PUPIL DURING ANESTHESIA

To the Editor:—In THE JOURNAL (Nov. 4, 1911, p. 1539), under the subject of "Anesthesia and Anesthetics," you have the following paragraph under "Ether":

"*Pupillary Changes.*—The pupils are first dilated under etherization and then contracted, and should remain more or less contracted during narcosis. When the eyelid is raised, if they are slightly dilated, they should quickly contract by light. If they do not so contract, the dilatation of paralysis has occurred, which is a danger signal, indicating that, ordinarily, the anesthesia is too profound."

I do not think a beginner would get the proper understanding of the pupillary changes from reading your paragraph. Your statement that the pupils "should remain more or less contracted during narcosis," I think, is wrong; on the contrary, they should remain more or less dilated. The pupils should react to light, but not contract, to the size that is usually considered a contracted pupil.

Lastly, you say, "If they do not so contract the dilatation of paralysis has occurred, which is a danger signal, indicating that, ordinarily, the anesthesia is too profound."

Again I have to take issue with you, for during narcosis or operative anesthesia, unless the patient has had morphin sulphate to affect the pupils, they will be more or less dilated, depending on the amount of ether the patient is receiving; otherwise the patient will not be relaxed and will be apt to move about or cough.

A widely dilated pupil not reacting to light is a danger signal. My statements above refer to the average case.

The following extracts, I think, will sustain my statements. F. C. Hewitt in "Anesthetics and Their Administration," says, under chloroform anesthesia, second degree or stage (p. 333): "The pupils during this part of the administration are, as a general rule, mobile and more or less dilated."

Of the third degree or stage, he says (p. 335): "The pupil during the stage of surgical anesthesia under chloroform has given rise to much comment and is well worthy of careful study. All observers agree that it is usually contracted in deep chloroform anesthesia."

By taking measurements with a pupillometer I find that in most cases the pupil measures from 2 to 3 mm. in diameter, usually being about 2.5 mm. The average chloroform pupil is, therefore, decidedly smaller than the average ether pupil.

Hewitt (p. 288) says of the second degree or stage of ether anesthesia: "The pupils are still mobile and usually more or less dilated."

Of the third degree or stage he says (p. 291): "The pupils of deep etherization deserve special mention, as they differ from the chloroform pupils in some respects. They are usually of moderate size or slightly dilated, from 3.5 to 4.5 mm. and are active to light."

Further, he says (p. 301): "The pupil will be of little service as a guide until after about a quarter of an hour from the beginning of the administration. The anesthetist will usually observe that it

he gives less ether the proper pupil of the particular case will get smaller; if he increases the depth of etherization it will grow larger."

C. N. CHIPMAN, Washington, D. C.

ANSWER.—We are glad to have our correspondent call attention to apparent differences of opinion in relation to the pupil in anesthesia. Examination of the objections raised, however, would show that they consist chiefly in a difference of interpretation. In the paragraph quoted from THE JOURNAL, the word "contracted" should not have been employed. The meaning which this rather careless expression was intended to convey was that the pupils, after dilatation, contract slightly. The word "contracted" was not used in the sense of a "contracted pupil." It refers to the reaction to light, which is a contraction. Our correspondent substantially agrees that on raising the lid, if the pupil is dilated, it should quickly contract to light, as he says, "A widely dilated pupil not reacting to light is a danger signal." The statement quoted from Hewitt that if the anesthetist gives less ether the pupil will become smaller and if he increases the depth of etherization it will grow larger, is correct and may be accepted without qualification.

SUPRARENAL SECRETION IN NEPHRITIS

To the Editor:—Please inform me if there has been any experimental work done or literature on the study of nephritis along the theory (a) that secretion from the suprarenal glands controls vascular tone; (b) that the tension is increased with an increase of secretion; (c) that this increased tension causes a disturbance of renal circulation and later renal incompetency; and (d) that a diminution of suprarenal secretion, by removal of all or a part of one suprarenal gland, would remove the surplus stimulus, thereby diminishing the tension and restoring the renal circulation to about normal.

This theory refers only to chronic nephritis, without any antecedent acute nephritis (toxic) and presupposes that increased arterial tension precedes evidence of nephritis.

M. STEFEN, M.D., Newark, N. J.

ANSWER.—This view of nephritis has been advocated by H. Vaquez and other French authors. The subject is discussed by R. M. Pearce (*Arch. Int. Med.*, 1908, ii, 77), who inclines to the view that the changes in the adrenals are due to the arteriosclerosis. It is found that these changes are not confined to chronic interstitial nephritis but are found also in other forms of chronic nephritis and indeed in all conditions with advanced arteriosclerosis. The subject is also discussed by J. H. Musser in THE JOURNAL, Nov. 27, 1909, p. 1790. So far as we know, no attempt has been made to treat nephritis by the removal of the adrenals. In addition to the articles cited, the following may be referred to:

Vaquez, H.: Des effets mécaniques de l'hypertension sur le système cardio-aortique, *Semaine méd.*, 1905, xxv, No. 19.

Carpenter, G.: Interstitial Nephritis and Cirrhosis of the Suprarenal Capsules in an Infant Five Weeks Old, *Lancet*, London, Nov. 3, 1906.

Beaujard, E.: Lesions in Suprarenals in the Course of Nephritis, *Semaine méd.*, 1907, xxvii, No. 20; abstr. in THE JOURNAL, June 22, 1907, p. 2166.

MERCOLIZED WAX

To the Editor:—Will you kindly let me know the formula of "Mercolized Wax," and also of "Dr. May's Epilepticide."

C. L. PATTERSON, M.D., Dayton, Ohio.

ANSWER.—1. "Mercolized Wax" belongs to the "prescription fake" type of nostrum. It is advertised "to remove the thin veil of dead cuticle and leave the skin dry, clear and beautiful." It was analyzed recently by the chemists of the Kansas State Board of Health who reported that it contained about 10 per cent. of zinc oxid and 10 per cent. ammoniated mercury mixed with an ointment base which had a consistency midway between petrolatum and paraffin.

2. We do not know the composition of the epilepsy "cure" put out by W. H. May, New York City. Most nostrums of this type consist of bromids prescribed in dangerously large doses.

The Public Service

Medical Department, U. S. Army

Changes for the week ended Jan. 13, 1912.

Bernheim, J. R., dental surgeon, left from temporary duty at Fort Benjamin Harrison, Ind., en route to station, Fort Sheridan, Ill.

Wing, Franklin F., dental surgeon, returned to temporary duty at Fort Robinson, Neb., from leave of absence.

McIntyre, Henry B., captain, resignation accepted by the President.

Huber, Edward G., captain, ordered to the army and navy general hospital, Hot Springs, Ark., for duty

Wells, Francis M., M.R.C., leave of absence extended one month and eight days. First Lieutenant Wells is relieved from active duty in the Medical Reserve Corps, to take effect on expiration of leave of absence.

Parce, Alexander D., lieut., ordered to the Letterman General Hospital, San Francisco, for duty.

Humphreys, H. G., captain, ordered to the army and navy general hospital, Hot Springs, Ark., for observation and treatment.

Ford, Clyde S., major, on expiration of present sick leave of absence will proceed to army and navy general hospital, Hot Springs, Ark., for observation and treatment.

Mason, George L., dental surgeon, left from temporary duty at Fort Crook, Neb., en route to Fort Des Moines, Iowa, for temporary duty.

Stallings, George E., dental surgeon, left from duty at Camp Fort Bliss en route to Fort Clark, Tex., for temporary duty.

Medical Corps, U. S. Navy

Changes during the week ended Jan. 13, 1912.

Evans, S. G., surgeon, detached from the naval academy, Annapolis, Md., and will await orders.

Johnson, M. K., surgeon, ordered to the naval academy, Annapolis, Md.

Sinclair, J. A. B., asst. surgeon, detached from duty in command of the naval hospital, Sitka, Alaska, and ordered home to await orders.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended Jan. 10, 1912.

Cobb, J. O., surgeon, detailed to represent the service at the meeting of the Association of American Medical Colleges to be held at Chicago, Feb. 28, 1912.

King, W. W., P. A. surgeon, granted one month's leave of absence from Jan. 22, 1912.

McCoy, G. W., P. A. surgeon, detailed to attend the Pan-Pacific Congress to be held at Honolulu, Hawaii, Feb. 19-24, 1912.

McKeon, F. H., P. A. surgeon, relieved from duty in the examination of arriving aliens and directed to report to the medical officer in command, U. S. Marine Hospital, San Francisco, for duty and assignment to quarters.

Ashford, F. A., P. A. surgeon, granted one month's leave of absence from Dec. 27, 1912.

Schwartz, Louis, asst. surgeon, relieved from duty at the U. S. Marine Hospital, San Francisco, and directed to proceed to Manila, P. I., and report to the chief quarantine for duty.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POST-GRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

GOVERNOR McCREARY ON STATE HEALTH WORK

In the message of Governor James B. McCreary to the Kentucky General Assembly a section of the report was devoted to the work of the state board of health. The amount of space devoted to this discussion of public health matters was much greater than is usually given to health subjects in state papers. Governor McCreary's appreciation of the work done in his state by physicians is in marked contrast to the indifference with which such subjects are treated in many states. The governor's remarks follow:

"The State Board of Health of Kentucky was created by the general assembly in 1878, during an epidemic of yellow fever then devastating the whole South, which invaded Kentucky before the defences against it could be organized. It was wisely endowed with ample powers to combat pestilence without, and to study the still more important domestic and ever present endemic diseases which are constant menaces to the lives, health and happiness of our people, as well as the most wasteful expense of our time in dollars and cents. Five epidemics of yellow fever have devastated the South since the creation of the board, but the disease has not only not obtained a foothold in our commonwealth, but under wise precautions we have been able to open our doors with characteristic hospitality to thousands of refugees from our afflicted sister states of the South.

"For the first twenty-two years the total annual appropriation for the whole work of the board was only $2,500, and for the last decade has only been $5,000 annually. During this thirty years wonderful progress in the study and prevention of such diseases as tuberculosis, typhoid fever and the diseases of childhood has only been possible because of the devotion and work of the 3,600 practicing physicians who have performed their function as guardians of the public health, furnishing offices and equipment for life-saving work, with but small compensation.

"The educational work and splendid health organization built up through the various years were given a new impetus

by the last general assembly, which created a new department of vital statistics, sanitary engineering and bacteriology, with ample appropriations for inaugurating these activities. These appropriations did not become available until Jan. 1, 1911, but the public and professional sentiment were so ripe for the work, that, at the end of the first eleven months, and for the first time in the history of Kentucky, the board was able to make a full, official record of 55,307 births, and 27,956 deaths, and what caused each of the latter, and to be able to state definitely that with the practice by the people of methods now well known to sanitarians, almost 40 per cent. of these deaths were preventable; to begin to map the water-supply of the entire state and to plot the sources of pollution of streams with the view to wise, far-reaching plans looking to the protection of this vital interest; and to take up in the laboratory the examination of sputum, blood and all such similar matters for physicians and citizens in such a way as to bring the benefactions of modern scientific methods for the prevention of sickness within reach of every hearthstone in Kentucky, free of cost.

"The press, teachers, physicians, women's clubs and other leaders of the public opinion are encouraging and cooperating with the board of health to an extent which promises to mark this as an era, not only in life-saving work, but in the economic history of the state.

"I believe the members of the State Board of Health merit commendation for services now being performed, and for services rendered during a third of a century with ability, energy and efficiency."

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

Fifth Month—Fourth Weekly Meeting

INJURIES ABOUT THE ELBOW-JOINT

Discuss diagnosis and treatment of each injury.

I. Fractures of lower end of humerus.
   a. Supracondyloid fractures.
   b. T- or Y-shaped fractures.
   c. Epiphyseal separation.
   d. Fractures of condyles and epicondyles.

II. Lesions of radius and ulna.
   a. Backward dislocation of radius and ulna.
   b. Fracture of upper third of ulna, with or without forward dislocation of radius.
   c. Forward dislocation of upper end of radius.
   d. Fracture of olecranon process of ulna.
   e. Fracture of head or neck of radius.
   f. Subluxation of head of radius.

Monthly Meeting

Indications for Operative Treatment of Fractures.[1]
Treatment of Compound Fractures.[2]
Treatment of Fracture-Dislocation of the Knee-Joint.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

IOWA: Capitol Bldg., Des Moines, February 6-8. Sec., Dr. Guilford H. Sumner, State House.

KANSAS: National Hotel, Topeka, February 13. Sec., Dr. H. A. Dykes, Lebanon.

NEBRASKA: State House, Lincoln, February 14-15. Sec., Dr. E. Arthur Carr, 141 S. 12th Street.

NEW YORK: January 30-February 2. Chief of Examinations Division, Mr. Harlan H. Horner, Albany.

Arkansas Homeopathic and Eclectic November Reports

Dr. P. C. Williams, secretary of the Arkansas Homeopathic Medical Board, reports the written examination held at Little Rock, November 14-15, 1911. The number of subjects examined in was 12; total number of questions asked, 120; percentage required to pass, 75. Two candidates were examined, both of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Hahnemann Medical College of Kansas City Univ.		(1902)	82
"Clifton, England"*		(1861)	75

Dr. C. E. Laws, secretary of the Arkansas Eclectic Medical Board, reports the written examination held at Little Rock, November 14-15, 1911. The number of subjects examined in was 12; total number of questions asked, 120; percentage required to pass, 75. The total number of candidates examined was 3, all of whom passed. Two candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery		(1903)	82
American Medical College, St. Louis		(1910)	85
Eclectic Medical Institute, Cincinnati		(1879)	89.9

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Bennett Medical College, Chicago	(1906)	(1910)	Penna.

* Name of college not given.

West Virginia Applicants Must Have Better Preliminary Education

The State Board of Health of West Virginia passed the following resolution at its meeting in November, 1911:

WHEREAS, Many of the papers of applicants for license to practice medicine in the State of West Virginia show a lamentable ignorance of even the rudiments of elementary education, and

WHEREAS, Many such applicants are from schools which, in their advertising literature, profess to require a fair preliminary education, some of them being members in good standing of the Association of American Medical Colleges, and consequently pledged to a minimum requirement of a high school certificate; therefore, be it

Resolved, That the attention of all medical colleges considered as now acceptable by this board be called to these facts, to the end that they may enforce strictly their professed requirements, thus keeping faith with the public and with the profession; and further

Resolved, That it is the sense of this board that after Jan. 1, 1912, the board would be justified in striking from the lists of colleges now acceptable to it all those institutions whose graduates in their examination papers evince imperfect preliminary education; and further

Resolved, That these preambles and resolutions be published in the *West Virginia State Medical Journal* and in THE JOURNAL of the American Medical Association and that a copy of them be sent to the various colleges interested.

Foreign Physicians in Peru

A report from Consul General W. Henry Robertson of Callao, Peru, published in the *Daily Consular and Trade Reports*, Dec. 27, 1911, is as follows:

The Peruvian regulations require that physicians who are graduates of foreign universities, and who desire to practice their profession in Peru, shall present themselves before the Faculty of Medicine of the University of Lima, bringing with them the diploma of the university from which they have graduated, with the signatures properly legalized by the Peruvian ministry of foreign affairs, and a certificate of personal identity issued by the minister or consul of the nation of the applicant resident in Lima. In the absence of these officials there must be produced a legal identification by witnesses.

The fees, which are to be paid before taking the examinations, amount to $493 American currency, which is the equivalent of the dues incurred by an alumnus receiving his medical instruction in the University of Lima. The examinations are five in number, and are taken in the following order:

1. Theoretical-practical. The theoretical comprises descriptive, general, normal and pathologic anatomy, and general and human physiology. The practical consists in actual dissection of the cadaver, together with a proper description of such dissection.

2. Theoretical-practical. The theoretical comprises general pathology and internal and external nosography, while the practical consists in the performance of one or two surgical operations on the cadaver.

3. Theoretical, which comprises medical natural history, medical chemistry and medical physics.

4. Theoretical, which embraces therapeutics and materia medica, medical jurisprudence and toxicology and hygiene.

5. Practical, which comprises the clinical examination of a patient, another of surgery and another of obstetrics; also, diagnosis, treatment and clinical histories.

1. Lane: Brit. Med. Jour., Nov. 18, 1905. Kelley: THE JOURNAL A. M. A., xlvi, pp. 103 and 178. Martin: Surg., Gynec. and Obst., August, 1906. Lane: Surg., Gynec. and Obst., April, 1909. Stimson: THE JOURNAL A. M. A., Feb. 20, 1909.
2. Progressive Med., December, 1905 and 1907.

Book Notices

ELEMENTS OF PHYSIOLOGICAL PSYCHOLOGY. A Treatise of the Activities and Nature of the Mind from the Physical and Experimental Points of View. By George Trumbull Ladd, LL.D., Emeritus Professor of Moral Philosophy and Metaphysics in Yale University, and Robert Sessions Woodworth, Ph.D., Professor of Psychology in Columbia University. Cloth. Price, $4 net. Pp. 704, with 153 illustrations. New York: Charles Scribner's Sons, 1911.

The second edition of this well-known text-book appears nearly a quarter of a century after the publication of the first, which edition was the first book in English and one of the first in any language treating of the relations of the brain and nervous system to the action of the mind. During the interval physiologic research and psychologic observation have been active so that a large body of new facts has been added as the basis of what was, at the time of publication of the first edition, practically a new branch of science. A considerable enlargement of the physiologic part of the work has, therefore, been necessary. Especially the investigations regarding cerebral localization and the comparative physiology of the brain have made great advances. As a result of these advances in knowledge and the more strict classification of the new science, the new edition confines itself more strictly to physiologic facts and methods, leaving analogous facts of experimental psychology to be treated in special works. Experimental psychology, however, receives due attention as far as it throws light on the operation of the nervous system.

The book is divided into three parts. Part 1 treats of the nervous mechanism, especially that involved in the operation of the special senses and in the originating of motor impulses. This part is essentially a detailed treatise on the anatomic relations of the nervous system in the animal kingdom, its development in the individual, and its structure and functions in the adult. The medical reader will find here little that is new to him, but the description is admirable. The chemical changes occurring during the action of the brain, especially in mental action, are described. The mechanism of the special senses, particularly those of sight and hearing, receive exhaustive treatment.

Part 2 treats of the correlations of nervous and mental phenomena. The methods of ordinary psychology and the results of experimental work are largely brought to bear in presenting these correlations. Part 3, comprising two chapters, discusses the nature of the mind and reaches the conclusion that the physiologic facts have really thrown little light on this question. The authors conclude that the mind is a real and unique existence with a non-material character. The authors say, "Finally, then, the assumption that the mind is a real being, which can be acted upon by the brain, and which can act on the body through the brain, is the only one compatible with all the facts of experience."

The work thoroughly covers the field which it has made so peculiarly its own. In consideration of the importance which psychotherapy has assumed in medical thought, such a work as this must appeal to medical men as well worthy of their perusal.

DENTAL DISEASE IN ITS RELATION TO GENERAL MEDICINE. By J. F. Colyer, L.R.C.P., M.R.C.S., L.D.S., Dent. Surgeon to Charing Cross Hospital and the Royal Dental Hospital, England. With the Assistance of Stanley Colyer, M.D. (Lond.) M.R.C.P., D.P.H. Cloth. Price, $1.60 net. Pp. 189, with 62 illustrations. New York: Longmans, Green & Co., 1911.

This book meets a decided need in medicine at the present time. Many of the theories to which the author adheres, however, have been superseded in America by newer ones which have been proved correct. Researches along this line are still in their infancy, but it seems that a work intended to occupy this particular field should contain the latest and best-established thought. For instance, the author seems to retain the old theories of thumb and finger-sucking as a cause of deformed arches. This theory became obsolete in America years ago. Colyer also regards adenoids as a factor in the growth of the jaws, but he does not take into consideration the many malformations of the face, jaws and teeth, which are always associated with adenoids and which could in no way be caused by them. He mentions syphilis as one of the causes of defective formation of the teeth, but loses sight of the fact that any constitutional disease in which nutrition is retarded at the first period of stress will produce the same results. The chapters on "Diseases of the Gums and Adjacent Mucous Membrane," "Oral Sepsis and Its Influence on the Body," and "Diseases Arising from Reflex Irritation from the Teeth," subjects on which every physician is anxious for enlightenment, are only a compilation of a series of reports from different men in England and Europe, describing experiences coming under their observation. What is needed is research to demonstrate the relation between cause and effect.

The author advocates the extraction of decayed deciduous teeth and carious first permanent molars with exposed pulps or septic pulps. Such methods of procedure in America would be considered malpractice. In this country, it is known that the extraction of the deciduous teeth and the first permanent molar, generation after generation, as performed in England, will eventually produce small jaws resulting in irregular dental arches.

The book, no doubt, will lead to further study and research.

DISEASES OF THE EAR, NOSE AND THROAT, MEDICAL AND SURGICAL. By Wendell Christopher Phillips, M.D., Professor of Otology, New York Post-Graduate Medical School and Hospital. Cloth. Price, $6 net. Pp. 847, with 545 illustrations. Philadelphia: F. A. Davis Co., 1911.

This is a further addition to the books on the ear, etc., that have appeared during the past one or two years. By this time the field for books on this subject would seem to be quite well supplied, and further additions might appear unnecessary, for a time, at least. Dr. Phillips' book, however, is a good one, and he presents the subjects in a clear and comprehensive manner. It is exceptionally well illustrated, a feature which has become indispensable for the present-day reader. There are few pictures that have appeared in other books, for which the author should be commended. The pictures on pages 72 and 73, indicating the method of performing a lumbar puncture, are exceedingly useful, and such pictures as those on pages 600, 601 and 602 describing Killian's frontal sinus operation are very illuminating. The skiagraphs, and transillumination pictures are unusually good.

A great deal of space has been devoted to the relationship existing between general diseases and those of the ear, nose and throat, and this space has not been wasted. The author has taken pains to clarify the subject of labyrinthine tests, diseases and surgery, and has performed his work well, although the necessity for reproducing the old and thoroughly puzzling pictures of Dr. Richards is not apparent. The chapters on mastoid surgery are clear and useful; nevertheless we fail to understand the apparent prejudice which has induced the author to write on this subject without making any reference to the use of the electric burr, which so many surgeons regard as indispensable to the best work. In sharp contrast to this, we note the abundant space given to the operation of ossiculectomy, which has become almost obsolete. In glancing over the chapter on furuncles of the meatus, we find no reference to the hypodermic injection of staphylococcus, which is certainly the most satisfactory method of cutting short course of this disease. The chapter on the various diagnostic tests is one of the best in the book.

HANDBUCH DER INNEREN MEDIZIN. Herausgegeben von Dr. L. Mohr, Direktor der Medizin. Poliklinik zu Halle (Saale) und Dr. R. Staehelin, Direktor der Medizin. Klinik zu Basel. Erster Band. Infektionskrankheiten. Paper. Price, 26 marks. Pp. 1077, with 288 illustrations. Berlin: Julius Springer, 1911.

Of this work, which is to appear in six volumes, the first volume is now before us. The fundamental principle on which the work is based is the reference of symptomatology, diagnosis and treatment to the principles of pathologic physiology. This volume treats of infectious diseases, and after a statement of the general facts regarding infection and immunity, the special diseases are taken up in detail. Much of this detail is made possible by the introduction of material in smaller type. The book is fully illustrated and contains somewhat extensive bibliographies for most of the articles. The present volume indicates that the work will be a useful addition to the numerous systems of medicine now before the profession.

Medicolegal

Liability for Damages for Wrongful Prevention from Getting Needed Medical Attendance—Determining Probable Effect of Treatment of Different Diseases—Cause of Death

(Gilmeson vs. Southern Bell Telephone and Telegraph Co. (Ga.), 71 S. E. R. 747)

The Court of Appeals of Georgia holds that damages for the death of a woman caused by the negligence of a telephone company making it impossible to secure the timely attendance of a physician are not too remote and speculative in their nature to be legally attributable to the wrong charged and to be recovered.

The court says that it is aware of the fact that courts are in wide disagreement as to whether damages which result through the failure to get a physician, so that the progress of a malady can be checked or the effects of a wound can be allayed, and injurious results prevented, are speculative and remote within the meaning of the rules with reference to the allowance of damages.

Some courts go almost to the extent of holding that it is impossible from a human standpoint to say what would be the result of a physician's services in checking almost any known disease or of relieving almost any imaginable physical hurt or injury. But to this court it seems that the difficulty which many courts assume to exist as to this question is largely factitious. To attempt to anticipate the result of almost any human act is always more or less problematical, but the fact that a thing may be problematical does not always prevent its being capable of reasonably accurate solution through the ordinary functions of the human intellect.

There are some diseases and human ills which so readily respond to the treatment of a physician, according to the general experience of mankind, as to make it merely an ordinary inference, such as we are daily accustomed to indulge and to act on, to say that if the treatment were applied the malady would be relieved. On the other hand, there are many diseases the results of which are so uncertain, even when the best treatment is had, as to make the chances of recovery always a matter of doubt. Whether any particular disease or any particular ill stands within the category of the reasonably certain or of the doubtful is a question that must be determined as the individual cases are presented.

So there are some diseases, such as cancer, tuberculosis, typhoid fever, meningitis, etc., as to which the court might say, as a matter of law (basing its conclusion on the state of common knowledge), that the chances of recovery were always speculative and doubtful. There are other diseases as to which, perhaps, the court might say, as a matter of law, that they would yield to proper treatment, basing this conclusion on the common knowledge of mankind. Between these two classes exists a wide class as to which common knowledge is not so well established; and in these cases the question as to whether the results of a physician's or a surgeon's services would or would not be doubtful or uncertain is a question of fact, and, being a question of fact, is a question for the jury. Juries are frequently called on to settle the probability of things, and to determine according to human experience whether this result or that result likely did ensue or will ensue from this or that somewhat problematic cause.

For instance, it is a common thing for a court to submit to a jury the question as to whether an injury will prove permanent, and to allow them to assess the damages with reference to their finding as to this question—a question often problematical to a high degree.

Now, if it is practically certain that a physician, by the application of known and available remedies, can stop a postpartum hemorrhage, such as the one which the decedent in this case suffered, and likewise practically certain that if the hemorrhage is not stopped the woman will die, and that if the hemorrhage is stopped she will recover; and if the decedent in the present case was suffering from a post-partum hemorrhage, and from nothing else that would likely have produced her death, and she did die, it seems perfectly plain to the court that it is merely to indulge a natural and ordinary inference to say that the failure to get the physician, so that the remedies could be applied, was the direct and natural cause of her death.

Those who hold that cases such as this are too problematic and speculative for solution by the jury seem to this court to make an unwarranted distinction between causal acts of omission and causal acts of commission. For example, suppose that a woman had been recently delivered of a child, and that the physician or midwife had applied packing or some other appliance to her organs with a view of preventing a hemorrhage, and by some wrongful act of commission these appliances were removed and the hemorrhage ensued, but few courts, if any, would hesitate to hold that it was for the jury to say whether the removal of the appliances was or was not the proximate cause of the ensuing hemorrhage, and, if death should ensue, of the homicide. Still many of these same courts would refuse to let the jury pass on the question as to whether a negligent act which prevented this same woman from procuring the benefits of these same medical or surgical appliances was the proximate cause of her death, resulting from hemorrhages started on account of the lack of them. This court does not see the difference. In the range of criminal law we find the courts holding that parents can be convicted of murder or of manslaughter for allowing a child to die through neglecting to supply the child with food, with clothing or with medical attention.

In this case before it would be proper to award the plaintiff any damages, the jury should be able not only to trace a connection between a negligent failure of the telephone company to give the plaintiff communication with the physician and the death of his wife, but they also should be able to say with practical certainty that her death was the natural consequence of the defendant's neglect. They must be able to go further and say that the death was not merely the imaginary or possible result of the wrongful act, but that according to the course of human experience it was the direct result—that in all human probability this result would not have happened if the defendant's neglect had not happened, and that the consequence of the neglect itself, and not something else, preponderated most largely in causing her death. It was reversible error to dismiss the plaintiff's petition on the grounds that it did not appear that his wife's death was the legal and natural result of the defendant's negligence and the damages were too remote and speculative.

Law Requiring Physicians to Report too Much Without Compensation

(State vs. Boone (Ohio), 93 N. E. R. 923)

The Supreme Court of Ohio holds that Sections 14, 17 and 21 of "An act to establish a bureau of vital statistics and to provide for the prompt and permanent registration of all births and deaths occurring within the state of Ohio," so far as they relate to a physician or midwife, in attendance on a case of confinement, are unconstitutional and void, because they were enacted by an unnecessary, unreasonable and arbitrary exercise of the police power. The court says that it need not inquire whether the state may not require a physician or midwife to report to the proper authority, for registration, the fact of a birth which has come under his or her observation, first, because it was conceded that it may do so, and second, because it obviously has some relation to the public welfare, and it cannot be very burdensome to comply with such regulation. But this statute went much further.

This statute imposed on the physician or midwife the duty of investigating and certifying as to certain facts which would not necessarily or naturally come within the knowledge of the attending physician or midwife, namely, whether the birth was legitimate, and, except in case of illegitimacy, the full name, residence, color or race, birthplace, age and occupation of the father; also the maiden name in full, residence, color

or race, birthplace, age and occupation of the mother; likewise the number of this child of the mother, and the number of living children of the mother. It was further provided that no certificate should be held to be complete and correct which did not supply all of the items of information called for therein, or satisfactorily account for their omission; and that the physician or midwife who should neglect or refuse to file a proper certificate of birth with the local registrar, within the time required by the act, should be deemed guilty of a misdemeanor, and, on conviction thereof, should be fined, etc. In short, a professional attendant at a birth was required to enter on an inquiry as to non-professional questions, to supply information to, it might be, a non-professional official, "clothed with a little brief authority," in relation to matters which perhaps are interesting as vital statistics, but as to which it requires more than appeared in this statute, or in the arguments in this case, to show that they are necessary or even related to the public safety, the public morals or the public welfare; and inquiry, too, which could be just as well and more appropriately conducted, reported on and certified to, by the local registrar, or a township assessor or a census taker.

The court is not prepared to yield unqualified assent to the proposition, as broadly stated in the contention made on the part of the state that statutes which impose the duty of making such reports or certificates are not unconstitutional because they do not provide for compensation to physicians; but it does not regard that point as decisive of this case. The court believes that the Great Charter of the Northwest Territory is still under, and above, and before, all laws or constitutions which have been made in the states which are parts of that territory; and that under its guaranties the state has not the right to draft a citizen into particular service without substantial compensation. At least, it is clear to the court that the provisions of this statute, which require a professional man to search out non-professional information and certify it to state authorities, are unnecessary, unreasonable and arbitrary, and are not, therefore, a valid exercise of police power.

Annatto in Milk

(City of St. Louis vs. Jud (Mo.), 139 S. W. R. 441)

The Supreme Court of Missouri in this case, one of a number of milk cases decided on the same day, affirms a conviction of violating a city ordinance by the possession, with intent to sell, of skim milk adulterated by being colored with annatto, a coloring matter declared to be used to make milk appear richer in fat than it really is. The chemist who analyzed the milk said, on cross-examination, that annatto is not harmful, and is used in coloring butter (by not being harmful he meant when prepared in a pure condition). He then described how it is made, and from what, testifying that stale urine is frequently used in its manufacture to give it stability and to keep it moist.

In 1905, this court decided, in St. Louis vs. Polinsky, 190 Mo. 516, a prosecution for carrying and exposing for sale cream adulterated by annatto, contrary to an ordinance, that adding annatto, whether harmful or not, in order to give milk the rich and golden color of milk from cows fed on green food, was a deception and a fraud on milk users, and on honest competition, and that an ordinance prohibiting it was a reasonable and valid police regulation. That pronouncement was made on a review of many authorities on full consideration, and has never since been shaken or exploded.

"Adulterate" means to corrupt, debase or make impure by an admixture of a foreign or baser substance. Adulteration is a "treatment to simulate a better article;" an "artificial concealment of defects." When the statute denounces adulterated milk without defining adulteration, the word may be allowed the meaning given it by lexicographers and understood by people using the English language accurately.

The housekeeper who buys milk for her table or children should be protected from adroit tricks, cheating her judgment by deceiving her eyes. Peradventure, golden-hued milk speaks of cows browsing in dewy meadow grasses. It harks back to bluegrass and clover, with a sprinkle of buttercups and daisies, not to annatto or any other dye. If such good woman wants annatto in her milk, the policy of the state is to let her put it in herself. Fireside lore and philosophy connect rich, yellow milk with the food of the cow, not with an artificial dye like annatto.

The court concludes that annatto in milk is not only against the policy of the state, and in contravention of a valid ordinance of St. Louis, but it is a species of petty treason to domestic philosophy and the simple verities of Nature itself. Counsel for the city said, in a flourish of rather startling rhetoric, that the city child now starts on its journey in life flanked by annatto on one side and by formaldehyd on the other. The court will not pass on the issue thus raised in the hot foot of argumentation, but content itself with affirming the judgment on the cold record.

Presumption of Continuance of Insanity

(In re Murphy's Estate (Mont.), 116 Pac. R. 109)

The Supreme Court of Montana says that lunacy, or insanity, if of a general, habitual or permanent nature, once shown to exist, is presumed to continue until the presumption is overturned by countervailing evidence. This rule is recognized by the courts generally. Where the existence of such insanity is made to appear, the presumption referred to attaches; for we know from experience that the condition usually continues. But to cases of intermittent or occasional insanity it can have no application, because in the very nature of things the idea of continuity is excluded. So that, when this is the condition, proof of its existence at one time raises no presumption that it existed either at an antecedent or subsequent time. And where, for instance, a person was of sound mind when he executed a will his precedent and subsequent condition is immaterial.

Society Proceedings

COLLEGE OF PHYSICIANS OF PHILADELPHIA

Meeting held Jan. 3, 1912

The President, DR. GEORGE E. DE SCHWEINITZ, in the Chair

The Anatomic Explanation of the Relatively High Pitched and Less Resonant Percussion Note Normally Found at the Right Pulmonary Apex

DR. GEORGE W. NORRIS and DR. GEORGE FETTEROLF: None of the explanations hitherto offered, regarding the difference in the percussion resonance normally elicited when the apices of the lungs are percussed, is believed to be satisfactory; we therefore studied a number of frozen sections of the thorax with the lungs hardened *in situ*. We found that the varying thickness of the pectoral muscle on which much stress is laid in many text-books, plays a very unimportant rôle, and this only when very light percussion is employed. For this purpose we studied the percussion resonance in thirty-two left-handed individuals.

The percussion differences are due to a number of causes: (1) The right apex is distinctly smaller than the left and more conical, the left being dome-like. The conical shape of the right apex is due to encroachment of the right innominate vein. (2) The subclavian artery as well as the innominate vessels lie more anterior to the right apex, more mesial to the left. (3) The right apex lies in direct contact with the trachea; the left is separated by the interposition of the aorta, subclavian artery, common carotid, esophagus and areolar tissue. (4) The thickness of the pectoral muscle may in some instances play a rôle if every superficial percussion is employed.

DISCUSSION

DR. JAMES TYSON: Dr. Norris and Dr. Fetterolf have reached an explanation of the difference in the physical signs at the right and left apices which is up to the present time the most satisfactory yet offered. The explanation which ascribes the impaired resonance at the right apex to the pec

toral cannot hold. The seat of this higher pitched and diminished resonance is above the spread of this muscle. The nearer you come to the clavicle the more striking these differences are. It would seem evident to any one giving the matter a little thought that there must be some substance interposed in that situation which raises the pitch to percussion and prolongs the expiration by facilitating conduction.

DR. HOBART A. HARE: My recollection of the research work carried on by Dr. Charles Cary of Buffalo is that his conclusions proved that the commonly accepted idea concerning the bifurcation of the right bronchus was not an adequate explanation.

DR. JAMES M. ANDERS: Judging from the pictures shown the difference in the size of the two apices is so slight that it probably has very little to do with the difference in their percussion notes. While the discovery made by Dr. Norris and Dr. Fetterolf with reference to the anatomic arrangement, especially of the blood-vessels on the right side compared with those on the left is probably the true explanation, or the major factor, still, it seems to me that we should not lose sight of the facts that the right main bronchus is the larger, that it is more superficial and somewhat higher up in the chest than the left, and gives off numerous branches all of which air-containing tubes occupy space on the right hand side which on the left is occupied by air cells.

DR. ROBERT N. WILLSON: Although I hesitate to offer still another explanation of this change of note, there is one which I think should be suggested as at least actively contributing to the condition under discussion, and it has undoubtedly occurred to many. Any one who tries to inflate his own chest will find, I think, that he inflates his left chest much more fully, easily and completely than his right. It is a well known fact that the upper part of the right lung is, as a rule, less fully inflated than that of the left lung. It is much more often involved in diseased processes for the reason that much more often there is stagnant and easily infected and infectious air present. It is also well recognized that very frequently the extreme right apex is involved with old scar tissue. The necropsy shows in a great many fairly healthy lungs old healed or latent tuberculous foci. Both these conditions must of necessity contribute toward the difference in resonance and pitch of the note on the right side, especially of that portion above the third rib. It would appear that the only difference in the percussion note that can be laid to the anatomic explanation offered by the authors would be one based on the position of the large vein placed over the anterior surface of the pulmonary apex on the right side. That this cannot and does not constitute the only causal influence in the light of clinical and post-mortem study seems a matter for almost certain common agreement.

DR. GEO. W. NORRIS: When I spoke of the right and the left apex, I did not refer only to that portion above the clavicles, but also to that portion of the lung which extends down as far as the upper border of the third rib. This statement alone will, if considered, tend to modify certain criticisms regarding our statements as to the relative size of the two apices. We have failed to find, utterly and entirely, the difference in the anatomic distribution of the bronchi to which Dr. Anders has referred and to which allusion is made in many of the text-books.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

California State Journal of Medicine, San Francisco

December, IX, No. 12, pp. 489-524

1 Significance of Pelvic Pain. R. L. Wilbur, San Francisco.
2 The "Split Proteid" Method of Artificial Feeding. W. D. Boggs, Pasadena.
3 Prostate in Chronic Gonorrhea. W. P. Willard, San Francisco.
4 Differential Diagnosis of Labyrinthine Affections. G. P. Wintermute, Oakland.
5 Eye in Its Semeiologic Aspect. W. F. Blake, San Francisco.
6 Minority Report on Contract Practice. D. A. Hodghead, San Francisco.
7 Tentative Classification of Exceptional Children. M. P. E. Groszmann, Plainfield, N. J.

January, X, No. 1, pp. 1-46

8 Eye in Its Semeiologic Aspect. W. F. Blake, San Francisco.
9 Plea for Earlier Radical Surgical Treatment of Gastric Ulcer. H. B. A. Kugeler, San Francisco.
10 Case of Polycythemia. W. C. Voorsanger, San Francisco.
11 *Extraordinary Temperatures. M. B. Lennon, San Francisco.
12 Case of Malignant Edema. J. Eaves, San Francisco.
13 Multiple Papillomata of Larynx in Children. E. C. Sewall, San Francisco.
14 Speech Disturbances. H. Horn, San Francisco.
15 Mechanical Efficiency. J. T. Watkins, San Francisco.
16 Case of Brown-Séquard's Paralysis Following Stab Wound of Back. W. W. Richardson, Los Angeles.
17 Misinterpretations in Teaching of Gross Anatomy. H. O. White, Los Angeles.
18 Transfusion in Typhoid. R. Bine, San Francisco.
19 Permanent Suprapubic Drainage of Bladder Without Leakage; Report of Case. H. Meyer, San Francisco.
20 Analysis of Treatment of Sixty-Two Cases of Syphilis with Salvarsan. L. Gross and W. S. Johnson, San Francisco.

11. **Extraordinary Temperatures.**—Except for a slight systolic murmur at the base of heart no pathology was discoverable in this case. The patient had been curetted about three weeks previously because of bleeding following a miscarriage. The abortive outcome of her pregnancy was a source of chagrin and disappointment to the patient and she took it deeply to heart. Noticing a slight tinge of blood on the bed sheets, she became greatly agitated, restless and sleepless, and from that time until the end of the week refused all food save asparagus tips, for which she evinced a marked predilection. That the patient was hysterical was plain to Lennon. Her skin was cool; her pulse was but 80; the rectal temperature was 105 F. Steadily rising, the temperature reached 107 F. by 8 o'clock in the evening and at midnight 109 F. An electric pad was put on the abdomen and ice irrigations given. The temperature advanced to 111 F. An ice bath given in the afternoon was followed by a drop of 2 degrees. In the evening a sedative and a second ice bath were given and in the course of fifty minutes there was a drop of 13 degrees without the least sign of shock. During the night the patient rested well, but at 6 a. m. the following morning 110 F. was recorded and by 9 o'clock another degree had been added. A second sedative and bath were given; twenty minutes later 114 F. was recorded. During the greater part of the day the temperature was about 112 F.; during the night it dropped a little, but the next day it was again at 112 F. The patient was moved to another room, one cooler, quieter and more commodious than the one she had been in. She thought she had been brought from the operating room where the curettment had been done three weeks before and had lost all memory of the intervening time. At noon she talked clearly, was hungry, but still registered 107 F. By 5 o'clock her temperature was normal. Except at the time of the warm bath her pulse never advanced above 90 beats per minute. The patient is now well.

Bulletin of American Academy of Medicine, Easton, Pa.

December, XII, No. 6, pp. 343-390

21 Should There Be Two Degrees in Medicine? B. Reed, Los Angeles.
22 Id. R. L. Wilbur, San Francisco.
23 Postgraduate Degrees in Medicine. A. S. Loblingier, Los Angeles.
24 Two Degrees in Medicine. G. Blumer, A. J. Smith, V. C. Vaughan, C. L. Dana and S. W. Lambert.

Military Surgeon, Washington, D. C.

January, XXX, No. 1, pp. 1-112

25 Conduction of Field Maneuvers of Militia Sanitary Troops. E. L. Munson.
26 Efforts of Ohio During Past Year. J. A. Hall.
27 Adaptation of Medical Service of National Guard to that of Army. J. F. Edwards.
28 *Typhoid in Philippines. W. P. Chamberlain.

28. **Typhoid in Philippines.**—Chamberlain summarizes his exhaustive study of this subject as follows: (1) Typhoid is a widely scattered and common disease in the Philippines; its incidence in Manila is above the average rate for the United States and is exceeded by only a few of the worst American cities; the average admission rate among American soldiers in the Philippines exceeds that for the troops serving in the United States; medical officers from many regions report its frequent occurrence among the Filipinos. (2) The statistics from the Filipino (native) Scouts show a much lower typhoid rate than for white troops, possibly due to failure to diagnose the atypical cases. (3) Widal reactions performed on

the blood of 591 healthy Filipinos suggest a comparatively recent attack of typhoid in about 6 per cent. of adults, but do not indicate that the disease is prevalent in childhood. (4) Many epidemics have occurred among soldiers in the Philippines and three outbreaks among natives have been studied. Epidemics of great severity among the Filipinos are either rare or unnoticed. (5) The occurrence of the disease in the Philippines is quite evenly distributed throughout the year. The incidence is least in the second quarter. (6) The appearance of the Widal reaction in typhoid in the Philippines is not as a rule delayed. (7) Paratyphoid organisms are occasionally isolated in the Philippines. (8) The leukocyte count in typhoid remains normal for whites and is slightly increased for natives. The differential count is normal for both races. (9) The mortality for white troops in the Philippine Islands during the last five years has been no higher than at home. It appears somewhat higher for Filipinos but this may be due to failure to diagnose all the mild cases. (10) More than a third of the cases of enteric fever, whether among Americans or Filipinos, are entirely atypical and cannot be diagnosed without laboratory methods.

Denver Medical Times and Utah Medical Journal

December, XXXI, No. 6, pp. 214-256

29 Case of Ludwig's Angina. F. C. Buchtel, Denver.
30 Preventive Medicine, or Hygiene. E. Stuber, Fort Collins, Colo.
31 Fatal Case of Infantile Scurvy Following Diet Confined Almost Exclusively to "Grape Nuts." J. W. Amesse, Denver.
32 Syphilis in Relation to Obstetrics. A. Pitsor, Denver.
33 Cerebral Localization. A. A. Robinson, Ogden, Utah.
34 Serum Treatment of Disease. G. C. Emery, Preston, Idaho.
35 Medical Profession and Purity. J. D. Dodge, Collinwood, Ohio.

Archives of Pediatrics, New York

December, XXVIII, No. 12, pp. 961-1032

36 *Albumin Milk as Contrasted with Other Milk Mixtures in Treatment of Diarrheas of Children. H. Heiman, New York.
37 Drainage Tube in Pleural Cavity. (Removed with Aid of Fluoroscopic Screen.) F. Huber, New York.
38 Spasmus Nutans; Report of Four Cases. H. K. Hill, Philadelphia.
39 Case of Catarrhal Laryngitis Requiring Intubation. J. T. Ullom, Germantown, Pa.
40 Summer Diarrhea in Infants and Children. M. J. Synnott, Montclair, N. J.

36. **Albumin Milk in Diarrheas of Children.**—Eiweiss milk was administered by Heiman to thirteen patients suffering from diarrhea for a length of time sufficient to determine its immediate effect on the general and local condition. For the purpose of proper classification these cases were divided into moderate and severe. The moderate cases included those with only slight fever, mild general symptoms and green stools varying from six to ten a day, containing mucus. The severe cases included those in which there was prostration, pyrexia, and very many stools, eight to ten or more a day, green in color and occasionally blood-streaked. The latter class would come under the head of alimentary intoxication of Finkelstein. There were seven cases of the moderate type. All with the exception of two had previously been breast- and bottle-fed. Two were exclusively bottle-fed. The duration of the disease previous to the admission to the hospital varied from five days to five weeks. The eiweiss milk was given for a period varying from three days to twelve days. Three gained from 2 to 5 ounces and four lost from 2 to 5 ounces. Maltose was added from the second to the tenth day and in one case at once. All but one of these recovered. There were six cases of the severe type, four were exclusively bottle-fed; of the two others one had the breast for three weeks and one for two months. The duration of the disease varied from four days to seven weeks. The eiweiss milk was administered in these cases for a period varying from two to fifteen days. Three babies gained in weight and three lost; the average loss was 5 ounces and the maximum gain was 4 ounces. Maltose was added from the second to the sixth day. Three patients died and three recovered. The ages of the patients who died were 2 months, 11 months and 13 months. For the purpose of comparing these results with those obtained by the use of other forms of diet, Heiman collected twenty-four cases of diarrhea. Of seven patients that received whey, barley and skimmed milk, two were moderate; one of these had one stool on the third day, the other remained unchanged at the end of five days, although two ultimately recovered. Four received skimmed milk, barley and milk sugar. Two were moderate and two were severe. Of the moderate cases, one on the fifth day had stools and the other was unchanged. Of the two severe cases, in both of which the patients died, there was no change within five days. The ages of the moderate patients were 5 months and 22 months. Of five patients fed on the skimmed milk, milk sugar and water, three were moderate and two severe. Of the moderate cases one showed reduction from six green stools on the fifth day, another one from five green to four yellow on the fourth day and the third was unchanged. Of the two severe there was none on the fifth day in one case and unchanged in the other. Of three patients that received barley or rice water, one was moderate and two severe. In the moderate case on the second day there was no stool and of the severe, in one, there was a reduction from four to two green stools on the fourth day, the other was unchanged. Taking these cases collectively, we find that there were twelve moderate and twelve severe cases. Of the moderate ones there was improvement within five days in six cases and of the severe ones in two cases. Of the thirteen eiweiss cases there were seven moderate and six severe cases. There was improvement in five of the seven moderate cases and of the six severe cases there was improvement in two. Only 50 per cent. of the moderate cases fed with various milk mixtures showed improvement within five days, the percentage of improvement in similar cases in which eiweiss milk was administered was 71. In the severe cases, of the ones fed on various milk mixtures the percentage of improvement was 16⅔, and in the eiweiss milk cases the percentage of improvement was 33.

Western Medical Review, Omaha, Neb.

December, XVI, No. 12, pp. 591-636

41 Drainage. H. P. Hamilton, Omaha.
42 Aids in Differential Diagnosis of Mental Disorders. J. M. Aikin, Omaha.
43 Dyspepsia Due to Myasthenia Gastrica. A. O. Peterson, Omaha.
44 Cystoscopy and Urethral Catheterization. L. A. Dermody, Omaha.
45 Epidemic Poliomyelitis. L. W. Bork, Oxford, Neb.

Vermont Medical Monthly, Burlington

December, XVII, No. 12, pp. 287-312

46 Three Hundred and Fifty Cases of Pulmonary Tuberculosis at Vermont Sanatorium. (Name of author not given.)
47 Renal Tuberculosis. W. W. Townsend, Rutland, Vt.

American Journal of Medical Sciences, Philadelphia

January, CXLIII, No. 1, pp. 1-156

48 *Causes of Ascites: Five Thousand Cases. R. C. Cabot, Boston.
49 *Infantile Hypertrophic Stenosis of Pylorus Based on Seven Operated Cases. F. E. Bunts, Cleveland.
50 Leukemia in Childhood. W. F. Cheney, San Francisco.
51 *Management of Failure of Circulatory Balance in Chronic Interstitial Nephritis. E. F. Wells, Chicago.
52 *Bacillus Dysenteriæ Recovered from Peripheral Blood and Stools of Cases in Panama. S. T. Darling and L. B. Bates, Ancon, C. Z.
53 Favorable Influence of Quinin and Urea Hydrochlorid in Large Doses Under Skin in Treatment of Acute Pneumonia, Lobar and Lobular. S. S. Cohen, Philadelphia.
54 *Bronzed Diabetes. Case with Special Reference to Involvement of Pancreas in Diabetes. N. B. Potter and L. S. Milne, New York.
55 Case of Loud Venous Hum Heard Over Xiphoid Cartilage in Cirrhosis of Liver, Autopsy. J. N. Henry Philadelphia.
56 Tuberculosis Among Physicians. J. N. Hall, Denver.
57 *High Calory Diet in Typhoid: 111 Cases. W. Coleman, New York.
58 Multiple Congenital Hemangio-Endotheliomas of Liver. B. S. Veeder, St. Louis and J. H. Austin, Philadelphia.
59 *Persistence of Gonococci in Male Urethra. E. L. Keyes, New York.

48. **Causes of Ascites.**—The actual causes of ascites as found post mortem in 2,217 autopsies are tabulated by Cabot. There were 224 cases of ascites. A quart or more of fluid was present in all the cases. Cases of septic peritonitis and hemoperitoneum are omitted. The bulk of the remaining cases are due to one of five causes: Cardiac weakness (89), nephritis (26), abdominal neoplasms (44), cirrhotic liver (23), and tuberculous peritonitis (15). Adherent pericardium (9), eclampsia (3), thrombosis of vena cava, portal and mesenteric veins (3), chronic fibrous peritonitis (3), uterine fibromyoma (3), intestinal obstruction (2), pancreatitis (1),

ovarian cyst (1), acute yellow atrophy of liver (1), status lymphaticus (1). The causes of ascites in 3,086 cases observed clinically at the Massachusetts General Hospital (1870-1910), were: Total cases of cardiac weakness from all cases 1,397, renal and cardiorenal 665, cirrhosis of liver, 325, tuberculous peritonitis 263, intestinal obstruction 86, ovarian cysts and tumors, 63 cases, uterine fibroma 55, neoplasmic peritonitis 53, cancer of liver and lymph-nodes 30, cancer of intestine and lymph-nodes 56, cancer of pancreas and lymph-nodes 11, malignant lymphoma (thoracic and abdominal) 5, adherent pericardium 36, pernicious anemia 15, leukemia 12, syphilis of liver, etc., 4, thrombosis of vena cava, portal and mesenteric veins, 10 cases.

51. **Chronic Interstitial Nephritis.**—The basic plan which Wells employs is, briefly, as follows: At intervals the patient is examined in such detail as to give such information as may be required concerning his environment and habits; nutritional requirements and supply; excretory capabilities and output; circulatory burden and reserve capacity. On the facts disclosed is based the advice given. The prescribed directions for diet, regimen and medication are based on the requirements for the individual, as determined by the full examinations mentioned as preliminary to any advice. The diet should meet the caloric and other nutritional requirements of the patient; should consist of available foods and should be definitely formulated in terms comprehensible to the individual. The total amount of food taken should be the smallest which will maintain nutrition at the highest level. A fair amount of active physical exercise, as shall be specifically directed from time to time. Massage should replace active exercise should the latter be impracticable. Once in four weeks, or as directed, he gives two freshly made pills of mercurial mass, of 5 grains each, every night for three days, followed the first time by ½ ounce of castor oil in the morning and the other two mornings by a saline cathartic. Other medication to be specifically directed. Immediately on the detection of the slightest evidences of circulatory embarrassment or occult edema, or of manifest dropsy or uremia, the patient should be given active and efficient treatment. He should be put to bed, in as nearly a horizontal position as possible, where he should remain until the circulatory balance has been restored. This Wells considers the most important medical measure which can be instituted, under the circumstances described, in these cases. The venous system is thus given an opportunity to drain itself easily; and the heart to regain its tone, largely because of the lessened strain on its right-side aspiratory action and the relief given to the ventricular contractions. In various ways probably every part of the circulatory system is offered more or less positive relief.

52. **Bacillus Dysenteriæ.**—By the use of a differential medium (Endo's), the authors have been able to isolate *Bacillus dysenteriæ*, the "Y" type, from two sporadic cases of dysentery, one a white American, an inhabitant of Ancon, Canal Zone, the other an infant living in and native of the small village of La Chorrera in the Republic of Panama. They have recovered from the circulating blood of a fatal case of dysentery, in routine blood-culture work, *Bacillus dysenteriæ*, one which agglutinates with antidysenteric serum in a dilution of 1 to 2,000 and is culturally of the Shiga type.

54. **Bronzed Diabetes.**—From what they found in the literature and from the study of their own case, the authors believe themselves warranted in stating only that cirrhosis of the liver is the primary condition; that pancreatic involvement with diabetes is a sequence or coincident event to this; that the hemochromatosis, always present in slight degree in liver cirrhosis, is in some cases very excessive and causes a general pigmentation which eventually also involves the skin; and finally, that the whole process is not any definite symptom-complex, but a chain of circumstances which rarely seems to be complicated.

57. **High Calory Diet in Typhoid.**—There were 111 cases in Coleman's series. Thirty-seven of the cases were mild, forty-three were severe and thirty-one were very severe. Eleven of the 111 patients died, giving a mortality of 10 per cent. The simple statement of the mortality, however, does not convey sufficient information regarding the cases. Sixteen and five-tenths per cent. of all patients in Bellevue and Allied Hospitals in 1908, 1909 and 1910, exclusive of the patients on high calory diet, died, while 10 per cent. of the patients on this diet died. Three cases complicated by hemorrhage proved fatal from other causes; one as the result of hemorrhages. A striking fact has been observed in the cases complicated by hemorrhage. When the patient has been well nourished, the loss of blood has produced little, if any, more effect than the loss of a corresponding amount of blood would produce in a healthy man. Perforation occurred in one case, lobar pneumonia in six cases, otitis media (probably the lighting up of an old process in all instances) in nine cases, bronchopneumonia in four cases, cholecystitis in two cases, pulmonary tuberculosis in one case, pleurisy in two cases, diphtheria in two cases, phlebitis in three cases, periosteitis in one case, panophthalmitis in one case and abscess about rectum (non-tuberculous) one case. None of the older diets for typhoid furnishes the patient with sufficient energy for his metabolic exchanges. Therefore a patient taking any one of these diets is compelled to live in part on his own tissues. The amount of food which a patient requires can be determined only by his individual needs. The clinical guides to these needs are the weight of the patient and the state of his appetite. A patient who is losing weight should be given more food if he can digest and absorb it. A patient who is hungry should be given sufficient food to appease his appetite. In the early stage of severe cases it is always difficult to give more than 3,000 calories a day; in the steep-curve period and in convalescence, patients take readily from 4,000 to 6,000 calories a day. If any article of food causes persistent disturbances of digestion, the quantity given should be diminished, or the food should be stopped; otherwise the object of the high calory diet, the maintenance of the patient's nutrition, is defeated. If a patient cannot take all the food he requires, he should be given all he can digest and absorb. Carbohydrates should furnish the greater part of the energy of the diet. The daily protein ration should not be below 62 grams, nor greatly exceed 94 grams. Clinical evidence indicates that a diet rich in fat may be taken by typhoid patients with benefit. Fat has furnished in some cases from one-third to one-half of the total energy of the food. In the cases studied, the high calory diet has apparently modified the course of the disease, shortened convalescence and reduced the mortality.

59. **Gonococci in Male Urethra.**—Keyes investigated eighty-six patients clinically cured, or nearly cured, of urethral gonorrhea. Thirty-six were investigated by the complement fixation test, seventy-seven by smear and culture. In five instances the patients were believed to be still infectious and this belief was borne out by the laboratory findings; in twenty-six the patients had active urethritis, believed to be postgonorrheal yet in eight of them gonococci were found. But among fifty-one with clinical evidence of cure (only shreds or light haze in urine), only two showed gonococci, both of them brief cases temporarily controlled by repressive injections, while one was passed as clean by both clinic and laboratory, yet relapsed and gonococci were found a week later. The relapse did not appear to be a new infection. Hence Keyes estimates about 4 per cent. of clinical error in cases apparently cured. However, in ten cases the clinical presumption of cure was not fully certified by the laboratory findings. Nevertheless, with all allowances made, he feels justified in stating that in sixty-four cases gonococci disappeared in less than a year, in seven others with urethritis, examined from two to eight years after the onset, gonococci persisted from one to two years. In almost all cases these conclusions were verified by clinical examination of the patient a month or so after the cure had been pronounced. Moreover, Keyes had the opportunity of examining nine cases cured of gonorrhea from two to eighteen years previously. In none of them were gonococci found, though the misleading "degeneration" forms of staphylococci appeared in one case. Only twice were gonococci found in cases of urethritis of more than two years duration. Gonococci were found and attributed to a recent infection.

American Journal of Surgery, New York

December, XXV, No. 12, pp. 373-404

60 Conservative Treatment of Gonorrhea in Women. W. H. Cary, Brooklyn.
61 Gonococcus in Puerperium. A. A. Hussey, Brooklyn.
62 Treatment of Gonorrhea Above Internal Os Uteri. N. P. Geis, Brooklyn.
63 Surgical Treatment of Repeated "Colds in the Head." C. E. Scofield, Brooklyn.
64 Arsenionization in Inoperable Cancer. G. B. Massey, Philadelphia.
65 Surgical Essentials. F. E. Neef, New York.
66 General Care of Cases of Laparotomy for Pelvic Diseases Before and After Operation. B. H. Wells, New York.
67 Theory, Technic and Results of Psycho-Motor Reeducation in Convulsive Torticollis. R. B. Kruna, New York.
68 Granger Universal Roentgen-Ray Frame. C. Weiss, New Orleans.

Journal of Experimental Medicine, New York

January, XV, No. 1, pp. 1-105

69* Effects of Subdural Injections of Leukocytes on Development and Course of Experimental Tuberculous Meningitis. W. H. Manwaring, New York.
70 *Studies with Electrocardiograph on Action of Vagus Nerve on Human Heart. G. C. Robinson and G. Draper, New York.
71 *Auricular Tachycardia with Consideration of Certain Differences Between the Two Vagi. A. E. Cohn, New York.
72 *Effects of Splenectomy on Cell Content of Thoracic Duct Lymph in Dog; Its Relation to Action of Pilocarpin. R. L. Dixon, Ann Arbor, Mich.
73 Cultural Studies on Mouth Spirochaetæ (*Treponema Microdentium* and *Macrodentium*). H. Noguchi, New York.
74 *Direct Cultivation of Treponema Pallidum Pathogenic for Monkey. H. Noguchi, New York.
75 Islands of Langerhans After Ligation of Pancreatic Ducts. M. B. Kirkbride, New York.

69. **Effects of Subdural Injections of Leukocytes.**—Subdural inoculation of tubercle bacilli of established virulence for guinea-pigs and rabbits, produces in the dog a tuberculous meningitis, followed by paralysis and death. Manwaring found that when suspensions of canine leukocytes are injected subdurally, following such inoculations there occurs uniformly a delay in the development of the paralysis and a prolongation of the life of the treated animal. In dogs inoculated with small doses of tubercle bacilli of low virulence, the development of paralysis has been prevented by this means for periods of seven months (up to the present date), while the untreated animals injected with the same cultures have all developed paralytic symptoms within a period of about four weeks.

70. **Action of Vagus Nerve On Human Heart.**—The electrocardiographic records taken by the authors during vagus stimulation by pressure from children suffering with chronic heart disease have shown that the stimulation of the vagi in these cases is strikingly effectual. In some of the cases, a definite difference was demonstrated between the action of the right and left vagi. The control of the rate of the heart-beat seemed to predominate usually in the right vagus nerve, while the control of stimulus conduction from auricles to ventricles apparently predominated usually in the left vagus. This difference in the two nerves, the authors believe, probably exists on account of the difference in their anatomic distribution, the right vagus going especially to that part of the heart which controls the rate of contraction, the sinus node above the right auricle and the left vagus going especially to that part in which the conducting mechanism is found. Each nerve, however, has to a lesser degree the function which predominates in the other. The whole heart seems to respond, as a rule, more promptly to right than to left vagus pressure and fairly constant differences have been seen in the effects which stimulation of each nerve has on the various waves of the electrocardiograms. The stimulation of each vagus may influence directly the contractions of the ventricles, causing great diminution in their force. Right vagus stimulation was followed at times by a complete dissociation of auricles and ventricles. The auricular rhythm was slowed sufficiently at this time to allow the ventricles, whose inherent rhythmicity is apparently unaffected by right vagus stimulation, to take up their own independent rhythm. The heightened ventricular rhythmicity in these cases allowed this to take place after only moderate slowing of the auricles. The independent ventricular rhythm was sometimes established in the region of the node of Tawara, for no disturbance of the ventricular portion of the electrocardiogram occurred. At another time, some other point in the ventricles inaugurated the stimuli of the independent ventricular contractions and an abnormal electrocardiogram resulted. The resemblance of the curves, showing dissociation, to those obtained during right vagus and left accelerator stimulation in dogs is definite. Analogy, the clinical picture and the form of the electrocardiograms of these cases have led the authors to the belief that an important feature in the pathologic physiology of these cases is hypertonus of the cardiac accelerator nerves.

71. **Auricular Tachycardia.**—The results of Cohn's experiments on the phenomenon of auricular tachycardia lead him to believe that it might result from one of the following lesions: (1) either the vagus (or certain of the functionally active fibers) do not reach the node; (2) or the node itself is pathologic and incapable of receiving the vagus fibers or of making effective the stimuli received from the nerve; and, in either case, an ectopic area of stimulus production has assumed the pace-making function. Absence of the sino-auricular node alone will not explain the phenomenon, however, for although the absence of vagus control is known to raise the heart rate, absence of the node is known to lower it. It is generally accepted, however, that, under pathologic conditions, other parts of the auricle may acquire a rate even faster than the pace-maker. That the electrical complex in such cases is not changed does not exclude the possibility of an abnormal site of stimulus production, for the new site may be so near to the old one that this change does not occur. Cohn holds that the fact that in Ribl's cases slowing of the ventricles occurred, following pressure on the right vagus, does not speak against this explanation, since, as previously stated, there is evidence that ordinarily some fibers from the right vagus reach the ventricles directly.

72. **Effects of Splenectomy in Dog.**—Dixon found that splenectomy in dogs results in an immediate increase of cells in the thoracic duct lymph, due to the manipulation involved in the operation. This increase is soon followed by a low cell count, attributable to the removal of an important source of the cells under consideration. Several months after the operation, a normal cell count is reestablished, due probably to a readjustment of activity on the part of other cell-forming tissues. Pilocarpin injections after splenectomy also results in an increase of cells, attributable to an increased activity of the respiratory organs and of the intestine. After the injection of pilocarpin, splenectomy may increase the cell count, but it causes a decrease sooner than in cases of pilocarpin injection not followed by splenectomy.

74. **Direct Cultivation of Treponema Pallidum.**—Noguchi has also succeeded in cultivating the *Treponema pallidum* from testicular syphilitic lesions in man. He found it advantageous to employ first a fluid medium and later, after adaptation had taken place, to substitute a solid medium. This is a satisfactory method for the testicular lesions which are nearly free from contaminating bacteria, but it is not applicable to the highly contaminated primary lesions in human cases of syphilis. Two conditions are all important in the working out of the method of direct cultivation: first the maintenance of strict anaerobiosis; and second, the property possessed by the pallida of migrating in the solid medium in which they are multiplying. To meet these conditions, Noguchi employed a high cylindrical layer of a solid medium consisting of two parts of 2 per cent. slightly alkaline agar and one part of ascitic or hydrocele fluid, at the bottom of which has been placed a fragment of sterile tissue, such as rabbit kidney or testicle. He concludes that the tissue acts chiefly by removing the traces of oxygen that exist in the lower levels of the medium, and probably also by providing a special form of nutriment. The solid medium, when inoculated with a fluid containing pallida and bacteria, seems to keep the latter fixed to the inoculation stab while permitting the pallida to migrate to a distance where they may often be found in a pure or nearly pure state. Comparisons have been made between the agar medium described and the gelatinized horse serum employed by Schereschewsky, in favor of the former. The material to be cultivated is obtained from lesions rich in the

pallidum, such as chancre, condyloma, or skin papule, from which are snipped off, after cleaning with sterile salt solution, suitable fragments. Inoculation of the pure cultures into the skin of two species of lower monkeys was followed by the production of lesions resembling the primary syphilitic lesion occurring in man and those caused in the monkey by inoculation of spirochete-containing serum from human sources. During the course of the positive inoculation in the monkey, the blood develops the property of giving a positive Wassermann reaction. Thus the relation of *Treponema pallidum* to this reaction is supported and the identity of the cultivated strains with the species found in human syphilitic lesions established.

Journal of Minnesota State Medical Association and Northwestern Lancet, Minneapolis

December, XXXI, No. 24, pp. 562-588

76 *Visceroptosis. L. Crummer, Omaha, Neb.
77 Important Factors in Dietetic Treatment of Disease. J. E. Davis, Detroit.
78 Method of Enucleation by Which Action and Efficiency of Orbital Muscles Are Better Conserved. L. W. Meckstroth, Wahpeton, N. D.

76. Abstracted in THE JOURNAL, Nov. 18, 1911, p. 1718.

Kentucky Medical Journal, Bowling Green

December 15, IX, No. 24, pp. 945-980

79 *Nephroptosis. C. W. Suckling, Birmingham, England.
80 *Five Hundred Nephropexies. W. Billington, Birmingham, England.
81 Some Complications Following Tonsillectomy. I. A. Lederman, Louisville.
82 Superheated Air as Therapeutic Measure. I. Lindenberger, Louisville.
83 Excision of Rectum and Sphincter for Carcinoma. B. Asman, Louisville.
84 Typhoid Treated with Vaccine. B. J. O'Connor, Louisville.

79. **Nephroptosis.**—Suckling's paper is based on over 400 nephropexies performed on 303 private patients. He is firmly of the opinion that surgery offers the only cure for nephroptosis.

80. **Nephropexies.**—Billington's experience has shown him that nephroptosis is the cause of much chronic ill-health and that nephropexy is followed by cure or great improvement in a very large percentage of cases where other treatment has failed to benefit or has produced temporary benefit only. Careful investigation to exclude other possible causes is necessary, but where this has been done and where there are no surgical reasons why nephropexy should not be undertaken, the operation should be advised. Even in the few cases that fail to benefit, no harm is done and in his whole series no patient has been made worse by the operation.

Mississippi Medical Monthly, Vicksburg

December, XVI, No. 8, pp. 145-168

85 Cancrum Oris; Case Following Typhoid. J. R. Lockhart, Sherard.
86 Tubercular Peritonitis in Children, with Special Reference to Fibrous Form. J. M. Acker, Aberdeen.
87 Galvanism as Therapeutic Agent; Report of Cases. W. J. Grady, Amory.
88 Varicose Veins of Leg Complicated by Ulcer. W. I. Coleman, Aberdeen.
89 Some Medical Aspects of Uncinariasis. W. H. Rowan, Wiggins.
90 Diagnosis and Treatment of Lobar Pneumonia. S. C. Cowan, Sabino.

Boston Medical and Surgical Journal

December 28, CLXV, No. 26, pp. 975-1006

91 *Popliteal Incision for Removal of "Joint Mice" in Posterior Capsule of Knee-Joint. E. G. Brackett and R. B. Osgood, Boston.
92 Ten Years' Work in Anesthesia. F. Allen, Boston.
93 *Intravenous General Anesthesia. A. M. Dodge, Boston.
94 Parasitic Multilocular Ovarian Cyst Weighing Ninety Pounds. P. E. Truesdale, Fall River, Mass.

January 4, CLXVI, No. 1

95 Relation of Chronic Appendicitis to Colitis. M. V. Tyrode, Boston.
96 Roentgenology of Enteron. H. W. Van Allen, Springfield, Mass.
97 Memorials to Dr. Thomas Dwight. J. C. Warren, J. B. Blake and D. Cheever, Boston.
98 Case of Cesarean Section for Placenta Prævia. J. G. Hanson, Northampton, Mass.

91. **Removal of "Joint Mice" in Posterior Capsule of Knee-Joint.**—The removal of joint mice and foreign bodies in the posterior portion of the knee-joint by any of the classical, quickly repairing incisions into the knee-joint is difficult, if not impossible, owing to the very small connection between the anterior and posterior capsules of the joint. The small caliber of this opening also prevents the bodies emigrating into the anterior capsule when the bodies are of any considerable size. The authors suggest an obvious, but apparently little used, method of approach to the posterior capsule. This approach is made by the posterior route by means of a linear incision, 10 cm. long, made in the popliteal space, centering over the joint line and slightly to the inside of the median line. In the upper part of the incision are seen the two diverging heads of the gastrocnemius muscle, and the separation of these two discloses the vessels lying just below, crossing vertically over the space, with a slight oblique direction from the inside above to the outside below. A blunt dissector will suffice to carry one down to the posterior ligament, and a clear workable space may be opened up, so that by palpation one can ascertain the position of the mouse or the foreign body. The capsule is so tense while the knee is extended, and the posterior joint space so circumscribed, that there is little danger of pushing the movable body out of range. When incision through the posterior ligament and capsule is made, the bodies usually present, owing to the tension of the capsule. Four cases were all closed without drainage.

93. **Intravenous General Anesthesia.**—According to Dodge, intravenous anesthesia is indicated in operations about the head and neck, in hemorrhage, in weak cachectic patients, in diseases of the respiratory tract where inhalation anesthesia is objectionable, etc. It is contra-indicated in nephritis, extreme arteriosclerosis, severe heart lesions, plethoric patients, etc. In Dodge's opinion, its chief field of usefulness will be found in operations about the neck, where it is desirable to have the anesthetic and anesthetist removed from the surgical field, and here it would seem to be the method indicated in a majority of cases.

Journal of Oklahoma State Medical Association, Muskogee

December, IV, No. 7, pp. 275-315

99 Epidemic Poliomyelitis. A. D. Young, Oklahoma City.
100 Medical Inspection of Public Schools, Its Needs and Desirabilities. A. B. Montgomery, Muskogee.
101 Treatment of Compound Fractures and Lacerated Wounds. V. Berry, Okmulgee.
102 Chorioditis. S. M. Jenkins, Enid.
103 Chloroform. W. Fowler, Alderson.
104 University of Oklahoma, School of Medicine. R. F. Williams, Oklahoma City.

West Virginia Medical Journal, Wheeling

December, VI, No. 5, pp. 183-218

105 Physician's Work in Building the Nation. R. E. Vanding, Charlestown.
106 Three Founders of Modern Medicine. C. O'Grady, Charleston.
107 What Shall We Teach the Laity? R. B. Miller, Hinton.
108 Differential Diagnosis of Affections Apt to Be Mistaken for Cerebral Tumors. T. A. Williams, Washington, D. C.
109 Quincke's Disease, or Recurrent Circumscribed Edema. G. B. Capito, Charleston.
110 Indications for and Method of Removal of Tonsils. J. A. Duff, Martinsburg.

Therapeutic Gazette, Detroit

December, XXXV, No. 12, pp. 837-924

111 *Hygienic and Dietetic Treatment of Arterial Hypertension. A. R. Elliott, Chicago.
112 Therapeutic Value of Salvarsan, with Report of Cases. E. J. Augle and J. J. Snipes, Lincoln, Neb.
113 How Tuberculosis Is Cured by Work. A. Robin, Wilmington, Del.
114 A Simple Appliance for the Relief of Residual Peroneal Paralyses Following Acute Anterior Poliomyelitis. C. O. Griffin, Bee Tree, N. C.

111. Abstracted in THE JOURNAL, Nov. 11, 1911, p. 1636.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

December 23, No. 2660, pp. 1637-1684

1 *Medical Education and Examinations. J. Griffiths.
2 Celiotomy Under Spinal Analgesia, with or Without Aid of General Anesthesia. L. McGavin.
3 Routine Use of Spinal Anesthesia. O. Richards.
4 *Case of Paroxysmal Tachycardia. R. O. Moon.
5 Leucodermia Undergoing Pigmentation on Exposure to Sunlight. K. H. Jones.

6 Ectopic Pregnancy Twice in Same Patient in Six Months, Two Separate Laparotomies. J. Oliver.
7 Epidemic Jaundice. D. O. Williams.
8 Periodical Hematemesis and Menstruation. D. Fleck.

1. **Medical Education and Examinations.**—Griffiths says that at present medical education is stereotyped, and each student is compelled to go through the stereotyped course and it alone. In order to show how absurd it is to insist on a stereotyped education for one and all, he cites an example from the University of Cambridge. A student who has taken up the study of chemistry, comparative anatomy, human anatomy and physiology and who after three years' study has obtained a first class degree in these subjects, finds that at the end of this period, he for some reason or other desires to enter the profession of medicine. Such a man, without any doubt is better trained and better educated than the majority of the medical students. But all this is of no use, for such a man must attend courses of prescribed length and must pass examinations which we know are not so good as the one in which he has already attained, perhaps, the highest distinction, before he can enter on the study of medicine.

In Griffiths' opinion the evils attendant on prescribing exact courses of study for the medical student are far greater than those that may possibly arise from insufficient knowledge and, he says, one of the first steps to take in reform is to give the medical schools complete control over all the training up to the end of anatomy and physiology and to throw on them the responsibility of certifying the pupils as fit and proper persons to enter on the work at the hospitals. The machinery for the training should be under the supervision of the general medical council in order to ensure that every facility exists for the necessary training of each student. He considers three years sufficient time to give a student training in all branches of clinical work, and to give him, in addition, all the sound knowledge concerning that work. All that is needed to carry this out is that the training shall be arranged definitely, step by step, that each pupil should undertake successively the work of each step and that he be certified as to proficiency in that portion of the work before he proceeds to another. Speaking of examinations and boards he insists that the examination should be a test in the work actually done by the student. It should be conducted where the teaching was undertaken. The test should be applied at the end of each complete course of training.

The board of examiners should consist of at least three persons, namely: (1) the teacher; (2) a representative of the corporation or university the student is attached to; and (3) a representative from the general medical council. The duties of the first two should be to conduct the examination and to award marks, the duty of the last to see that a due standard of proficiency in all the technical portions of the work is attained by each candidate. If this were done it would practically mean the establishment of a "common state qualification" having a standard in technic that must be attained by all who desire to enter on the duties of the profession of medicine.

4. **Paroxysmal Tachycardia.**—A woman, aged 35, complained of palpitation of the heart and pains in the chest for some years. The pulse-rate was 180, but examination of the heart disclosed nothing abnormal beyond the rapidity of the pulse. She was said to have been delicate from childhood, and began to be subject to these attacks of rapid heart beating and palpitation some fourteen years previously. There was no history of any other illness. The attacks used to come on about every five or six months, beginning quite suddenly and unexpectedly, very often soon after food, but also quite frequently in the night. She herself associated the attack with indigestion. The attack would last any time from four to twenty-four hours and then pass off gradually. She was not very much distressed and would go to her work as usual; she could not, however, lie down during an attack and therefore when it occurred at night she was a good deal troubled by it. On only one occasion did she complain that she had severe pain in an attack. She died during one of these attacks. The necropsy disclosed an unusually large patent foramen ovale, but an otherwise normal heart.

Medical Press and Circular, London

December 13, XCII, No. 3788, pp. 623-648

9 Medical Aspect of Gall-Stones. E. B. Leech.
10 Some Points in Heredity. R. C. Lucas.
11 Causes of Limping in Children. D. Savarlaud.
12 Tarantism: An Historical Note. J. Knott.

December 20, XCII, No. 3789, pp. 649-672

13 Nervous Manifestations in Children and Their Treatment. R. O. Moon.
14 Treatment of Carcinoma of Rectum and Pelvic Colon. W. E. Miles.
15 Chloroformisation of Patients Sitting in Upright Position. J. H. Chaldecott.
16 Protective and Scientific Organization of Medical Profession. T. P. Beddoes.
17 Local Anesthesia of Region of Trigeminus. H. Braun.

British Journal of Children's Diseases, London

December, VIII, No. 96, pp. 529-598

18 *Cases of Night-Blindness with Peculiar Conjunctival Changes in Children. S. Stephenson.
19 Median Congenital Fissures, Fistulæ and Dermoid Cysts of Nose. J. H. Evans.
20 Surgery and Electro-Therapeusis in Infantile Paralysis: Attempt to Define Sphere of Each. F. Hernaman-Johnson.
21 *Aneurysm of Coronary Artery. R. S. Trevor.

18. **Night-Blindness.**—Stephenson found night-blindness to be present in 1.87 per cent. of 6,209 healthy children whose eyes he examined a few years ago. It prevails in summer and autumn, and is seldom seen during the winter months. The symptom-complex, in its fully developed form, includes, first, changes in the ocular conjunctiva, and secondly, night-blindness. This conjunction is sometimes spoken of as "Bitot's syndrome." The conjunctival changes are seldom seen except in that part of the ocular conjunctiva which is exposed when the lids are open, the so-called "interpalpebral zone." They usually affect both eyes, sometimes to an unequal extent. They occur as more or less triangular areas, which are dry, and look as if they had been bespattered with tiny particles of white foam. If the foam-like material be wiped away it is reproduced within twenty-four to thirty-six hours after complete removal. The glistening, dry-looking plaques, if once seen, can scarcely be mistaken for anything else. To the condition the name "epithelial xerosis" is commonly applied. The patches on the conjunctiva are crowded with the saprophytic organism, the xerosis bacillus. The relationship between conjunctival changes on the one hand and night-blindness on the other is not invariable. The one symptom may occur without the other, and vice versa. Among eighteen cases of xerosis, seen by Stephenson in 1895 at school, no fewer than 61 per cent. were more or less blind at night, whereas during 1896 and 1897, when nine cases of xerosis were respectively found, definite night-blindness appeared to be altogether absent. However, Stephenson believes that the connection is much closer than is generally supposed.

21. **Aneurysm of Coronary Artery.**—The history of Trevor's case was as follows: Seven days prior to admission the girl, aged 11, caught a "chill" while bathing. This was followed by a rigor, sweating and pain in the left knee. For three days prior to admission there was soreness of the throat and the legs became swollen. The only previous illness was measles six years ago. On admission the child was flushed and restless, with a temperature of 102 F., pulse 108 and respiration-rate 28. There was no pain in, or swelling of, the legs. The heart's apex beat was diffuse, in the sixth space, 1 inch external to the nipple line. The area of cardiac dulness extended 1½ inches to the left of the nipple line but not to the right of the sternum. A rough systolic mitral murmur and thrill were present. The murmur was best heard 1½ inches internal to the nipple line. The lungs and abdomen were natural. Four days after admission, a red, tender swelling appeared at the right great toe-joint. There was no reaction to salicylates. Temperature 104 to 105 F. The heart condition was as on admission. Streptococci were found in the blood on the seventh day and a vaccine was prepared. Polyvalent serum was given in the meantime. On the tenth day a to-and-fro cyclical murmur, which was very rough and scratchy, became audible, and was best heard over the tricuspid area, but was conducted over the entire precordium. The twelfth day there was evidence of rapid dilatation of the heart, temper-

ature remaining about 104 F. The patient died on the fifteenth day. The diagnosis made was infective endocarditis and pericarditis.

At the necropsy, in the cavity of the right ventricle, just to the inner side of the anterior papillary muscle, was an adherent mass of clot, guarding at its lower end a rounded or oval opening, with a maximum diameter of ¼ inch, leading into the interior of a prominence on the postero-lateral wall of the ventricle. The edges of the opening were rough and the surrounding endocardium appeared ulcerated. The prominence was caused by a thin-walled fusiform aneurysm of the descending branch of the right coronary artery, situated within the muscular wall of the right ventricle. The sac was of about the size of a small plum, and the lining membrane bore some rough adherent clot at its upper part and was ulcerated below at the opening into the right ventricle. The right coronary artery was remarkably dilated. Its opening in the right sinus of Valsalva measured ½ inch across and admitted the little finger easily and the lumen continued of large size to the point where the descending branch was given off. Beyond this point the lumen ended almost blindly, two fine holes indicating the continuation of the vessel along the auriculo-ventricular furrow. The artery showed no evidence to the naked eye of any acute inflammatory change, nor was acute endarteritis present on histologic examination. The left coronary artery was normal at its commencement and showed no obvious dilatation. The aorta above the valves showed a few patches of atheroma. Its branches were given off normally and no abnormalities in the rest of the vascular system were discovered. The abdominal organs showed cloudy swelling and there was no exudate. The right knee-joint was healthy.

Journal of Tropical Medicine and Hygiene, London

December 15, XIV, No. 24, pp. 365-380

22 Etiology of Beri-Beri. H. Fraser and A. T. Stanton.

Lyon Chirurgical, Lyons

December, VI, No. 6, pp. 617-702

23 *Temporary Fixation of Fracture with Long Nail. (Du maintien de la réduction de certaines fractures et de certaines sections osseuses, suite d'interventions chirurgicales, par l'enclouage temporaire.) M. Cantas.

24 *Advantages of Roentgenotherapy of Suppurative Lymphadenitis. (Traitement radiothérapique des polyadénites inflammatoires et suppurées.) F. Barjon.

25 *Roentgenoscopy of Kidney Pelvis. (Injection de collargol dans le bassinet suivie de radiographie pour servir au diagnostic de certaines affections rénales.) T. Nogier and J. Reynard.

26 Complications of Prostatitis. (Abcès de la fosse iliaque interne et adénites inguinales au cours des prostatites suppurées.) L. Thévenot and C. Rey.

27 *Plastic Operations on the Urethra. (L'urétroplastie par greffe veineuse doit-elle être conservée?) R. Leriche.

23. **Nail Fixation of Fractures.**—Cantas gives illustrations of a few cases of fracture involving the knee or long bones or amputations in which the patella was replaced to form the base of the stump, the parts being held immovably in place by a long, sharp, steel nail driven temporarily into the bone.

24. **Roentgenotherapy of Lymphadenitis.**—Barjon gives photographs of five patients with inflamed or suppurating cervical lymph-nodes before and after treatment with the Roentgen rays. The method is painless while its action, he says, is more rapid and more certain than any other measures in vogue to date, curing lesions in a few weeks which have resisted other methods of treatment for years. There is no scar or disfigurement left and the general health improves as the infectious focus is suppressed. The only by-effect observed in his experience with more than 300 exposures was transient headache after the exposures in a few rare cases. There seems to be no danger of inducing metastasis or spreading the infection, such as has sometimes been ascribed to excision of the lesions. The acute forms are most amenable to the Roentgen rays, young adenoid tissue being peculiarly sensitive to the action of the rays. Chronic, hard lesions require a longer course of treatment, but finally yield; the fibrous cicatricial forms are the most rebellious so that unless the swelling is disfiguring it is better not to attempt to treat it in this way. Cicatricial keloids are very favorably influenced by the Roentgen rays, often subsiding or even disappearing entirely under the exposures. He evacuates the pus or cheesy matter by puncture and aspiration, repeating this as often as necessary, sometimes injecting a modifying solution, supplementing the medical measures by roentgenotherapy, as also when the abscess has broken through the skin.

25. **Pyelography.**—This term has recently been coined for the process of injecting a silver salt into the kidney pelvis for roentgenoscopy. Nogier and Reynard report two cases in which this alone cleared up the diagnosis, revealing intermittent hydronephrosis in one case and in the other a small cavity with irregular edges, undoubtedly of tuberculous origin, and thus permitting radical treatment in time.

27. **Plastic Operations on the Urethra.**—Leriche comments on the success of plastic operations on the urethra in dogs, substituting defects by a segment of the saphena, but he states that he has been unable to find any record of a clinical instance of vein grafting for this purpose free from fistula or other complication entailing recurrence of the trouble in time. The experiences in this line published by other surgeons confirm his own conclusions from three clinical cases; namely, that the vein graft to be successful must not be sutured to the urethra but a special channel must be bored for it outside, thus bringing all its outer surface into contact with raw, live tissue and facilitating aseptic healing. Or the grafting operation might be deferred until the urethra has had a chance to heal by having the course of the urine diverted for a few months. Then the urethra could be tunneled and the vein graft carried into it as into a new channel; the graft-holder should be left in place for a week and both ends of the graft should project at first for some distance beyond the gap to be filled. The graft will then grow into place without the necessity for suture, and it may be possible thus to make a new urethra with less tendency to stricture and of a more constant caliber than would be possible with a Nové-Josserand skin-flap tube or Cantas' modification of this technic, twisting around from the inside of the thigh a flap of skin including in it a stretch of the internal saphena, and thus obtaining a pedunculated vein flap.

Obstétrique, Paris

November, IV, N. S., No. 11, pp. 953-1111

28 *Cervical Placenta Prævia. (Contribution à l'étude de la grossesse isthmico-cervicale.) L. Devraigne.

29 *Conservative Cesarean Section After Rupture of the Membranes. Le Lorier.

28. **Cervical Placenta Prævia.**—Devraigne reviews the literature which has been accumulating during the last sixteen years on implantation of the placenta below the internal os, the isthmic-cervical variety of placenta prævia. The possibility of implantation below the internal os is denied by some, but Devraigne reports a case in which the fetus had developed entirely below the internal os, the body of the uterus being entirely free. The patient was a woman of 35 and this was her sixth pregnancy. She ceased to feel any movement from the fetus after the sixth month and she was artificially delivered of a dead fetus which had developed exclusively in the distended isthmus. Tarnier has reported a similar case, only in his there was a complicating fibroma in the distended isthmus. In the sixteen cases of isthmus pregnancy reviewed, various measures were applied. The prognosis is extremely grave for both mother and child, only two of the infants being born alive and only six of the fifteen women surviving. The diagnosis may be difficult; all the clinical history can be summed up in the one word "hemorrhage." The main point is to bear the possibility of such a contingency in mind. The only means to arrest the hemorrhage under these conditions is by removal of the uterus; the patients are usually women who have borne several children. The precautions against puerperal complications must be redoubled in cases of placenta prævia; with fetid lochia he advises injecting a solution of iodin and hydrogen dioxid.

29. **Conservative Cesarean Section After Rupture of the Membranes.**—LeLorier reviews nineteen cases of Cesarean section after rupture of the membranes; notwithstanding that the amniotic fluid was septic and the uterus had been entered in some cases, the outcome was favorable for both mothers

and children. The maternal morbidity was 31 per cent., but the course of the cases showed that the classic technic offers all the advantages of the new extraperitoneal methods, while the technic is far simpler. He advises drawing the uterus out and suturing with the Lembert technic. Whether to drain or not is still open to discussion. He gives the details of his nineteen cases.

Presse Médicale, Paris

December 9, XIX, No. 98, pp. 1013-1024

30 Salvarsan in Relapsing Fever. (Traitement du typhus recurrent par le dioxydiamidoarsenobenzol.) Ardin-Delteil, L. Nègre and M. Raynaud.
31 Evolution of Matter. (L'évolution de la matière dans l'univers.) L. Matout.

December 13, No. 99, pp. 1025-1032

32 *Syndrome from Intestinal Arteriosclerosis. L. Lagane.
33 Connection Between Arterial Pressure and Viscosity of the Blood. (Pression artérielle et viscosité sanguine.) A. Martinet.

32. **Arteriosclerosis of the Intestine.**—Lagane discusses the syndrome liable to be induced by sclerotic degeneration of the walls of the arteries or arterioles in the mesentery or bowel. The attacks resemble angina pectoris in many of their features, especially the intensely painful cramps accompanying the transient paralysis of the segment of the bowel involved and consecutive meteorism. During the attack the abdominal aorta may be so sensitive that even the weight of the clothing is unbearable. The pain seems to be the result of some physical exertion or emotion which has induced a sudden modification in the circulation through the sclerotic region —an abdominal angina. Differentiation is difficult unless manifestations of arteriosclerosis elsewhere give the clue. When the arterioles are chiefly involved, the circulation is more permanently disturbed, and edema, interstitial hemorrhage and even ulceration may occur. Without involvement of the arterioles, conditions generally soon right themselves clinically. The syndrome has been called by various writers abdominal apoplexy, intra-abdominal intermittent claudication, intestinal miopragia and intermittent ischemic dysperistalsis. The intestinal crises may coincide or alternate with similar disturbances in the stomach from similar arteriosclerotic lesions in the vessels of the nerves. A retrospective diagnosis may be possible from the benefit of medication with nitrites or diuretics in the acute or chronic phases. Some have reported benefit and clearing up of the diagnosis under tincture of strophanthus alone or associated with theobromin. The condition is very liable to be mistaken for mucomembranous enterocolitis, neuro-arthritic diarrhea, the diarrhea of uremia or cirrhosis, pylephlebitis, intestinal cancer, peritonitis, lead colic, appendicitis or obstruction of the intestines. Mesenteric atheroma alone induces spasm of the intestine by irritation of the nerves or by ischemia of the intestine, with resulting thrombosis. Involvement alone of the arteries in the wall of the bowel induces limited apoplexy or ulceration, while the two forms combined lead to infarction of the intestine and in a later stage to local gangrene.

Revue de Gynécologie, Paris

November, XVII, No. 5, pp. 401-496

34 *Mechanism and Treatment of Genital Prolapse. (Mécanisme et traitement du prolapsus génital.) H. Trent.
35 *Kidney Functioning Before and After Nephrectomy for Tuberculosis. (Comparaison du fonctionnement rénal avant et après la néphrectomie pour tuberculose.) M. Chevassu and O. Moreno.

34. **Mechanism and Treatment of Genital Prolapse.**—Trent argues that relaxation of the anterior wall of the vagina is the main factor in genital prolapse, and that treatment should aim essentially to prevent inversion of this part of the vagina. Efforts to suspend the uterus are not the logical method of treating the condition, except in the absolutely exceptional cases in which the prolapse of the uterus is primary. A plastic operation on the vagina is generally all that is needed to counteract the tendency to prolapse. This is accomplished by making the anterior wall of the vagina narrower and by strengthening its supports. He does not operate until after failure of persevering treatment with a hard rubber pessary, first a thin ring, then a Prochownik pessary—a shallow perforated saucer—and then a wide ring. The convexity of the Prochownik pessary is turned upward, to fit against the anterior wall of the vagina. The main point is to select the pessary of the proper size and not get it too large. It should hold up well the anterior wall of the vagina, even during straining, while it should not distend the posterior wall. If the posterior wall feels like a bellying sail, the pessary is too large and should be changed for a smaller size. A total diameter of 7 cm. is the usual size. The diameter was between 6.5 to 8 cm. for 87 per cent. of his 167 patients in this class. He orders the woman to take a tepid vaginal douche daily, and have the pessary cleaned every three months or at longer intervals according to the degree of vaginal secretion. Trent advised operative treatment in only 16.5 per cent. of 97 private patients and in 14 per cent. of his 1,036 office patients during the same period. Reexamination of 103 in the latter group showed excellent conditions in 82 per cent. Only when there is inversion of the posterior wall of the vagina are operative measures indicated from the start. This is the case also when the supporting muscles are entirely atrophied so that they afford no support. In regard to the Schauta-Wertheim technic, he states that the prolapse recurred in 24 per cent. of the cases in which he applied this measure. He found recurrence in nineteen of seventy-nine patients operated on by various technics from three to eighteen years ago, and in three of his operative cases the women died from postoperative pneumonia or pulmonary embolism or degeneration of the heart and kidneys, for which the anesthesia and loss of blood were probably responsible. Some women complain of disagreeable or painful paresthesia in the field of operation and others that the vagina is abnormally narrow. These and other reasons compel him to preach with greater insistence the superiority over all other measures of the pessary treatment he advises.

35. **Kidney Functioning After Nephrectomy.**—Chevassu and Moreno give graphic tracings of the metabolic and other clinical findings in four cases in which one kidney had been removed for tuberculosis. The functioning of the remaining kidney is most instructively shown by Albarran's experimental polyuria and Ambard's formulas. Albarran's test is the rapidity with which 750 gm. of ingested water is passed out of the system; this test shows the water-eliminating power of the kidney, while the ability to eliminate urea is shown by comparison of the proportions of urea in the blood and in the urine. Ambard has found that when the kidney is excreting urea at a constant concentration, the output varies proportionately to the square of the concentration of urea in the blood. When the blood proportion is constant but the urine proportion variable, the output is inversely proportional to the square root of the concentration of urea in the urine. On the other hand, when the proportion in both blood and serum is variable, the output varies directly proportionate to the square of the concentration of urea in the blood and in inverse proportion to the square root of the concentration of urea in the urine. The findings with these two tests throw light on the prognosis, showing the cases in which the progress is onward and upward and those doomed to go down sooner or later.

Semaine Médicale, Paris

December 20, XXXI, No. 51, pp. 601-612

36 Visible or Palpable Pulse in Subclavian Arteries as Sign of Sclerosis of the Thoracic Aorta. (Les chocs des artères sous-clavières comme signe de la sclérose de l'aorta thoracique.) C. Trunecek.

Berliner klinische Wochenschrift

December 18, XLVIII, No. 51, pp. 2285-2332

37 *Artificial Pneumothorax in Treatment of Tuberculosis. (Ueber die Behandlung der Lungentuberkulose mittels künstlicher Pneumothoraxbildung.) F. Klemperer and J. W. Samson.
38 Statistics in Regard to Tuberculosis in Germany. (Zur Tuberkulosestatistik.) M. Mosse.
39 *Prophylaxis of Thrombosis and Embolism. H. Küster.
40 Advantages of Saphenectomy in Treatment of Varices. (Einiges über Krampfadern.) E. Unger.
41 *Exophthalmic Goiter. (Die Basedow'sche Krankheit.) H. Coenen.
42 *Public Stations for Therapeutic Rest in the Open Air in the Large Cities. (Liegekurgärten in der Grossstadt.) E. Bratz.
43 *Recent Progress in Knowledge of Tropical Diseases. (Praktische Ergebnisse aus dem Gebiete der Tropenkrankheiten.) H. F. W. Hoffmann. Commenced in No. 50.

37. **Induced Pneumothorax in Pulmonary Tuberculosis.**—Klemperer's experience confirms the practical importance of this method of treating severe unilateral tuberculous lesions. He reports four cases and discusses the special indications and technic, regarding it as not a particularly serious or dangerous method of treatment. He would restrict it to cases in which the disease does not seem to be arrested by the ordinary measures, including tuberculin treatment, but continues a slowly progressive course, not waiting, however, until the lesion has entered its final phase. The best results have been obtained in the moderately severe cases in a comparatively early stage.

Samson declares that in a certain number of cases the induced pneumothorax produces results unattainable by any other measure, and he urges its wider adoption in many otherwise incurable cases of tuberculosis. He ascribes the first suggestion of the procedure to the English physician Carson, in 1821; adding that Dauss rescued the suggestion from oblivion but Forlanini in Italy and Murphy in America suggested it anew and applied it in practice. Samson has applied the method in seven cases, making seventy injections of nitrogen in all, his experiences confirming those reported by other writers. The most striking and direct effect is the subsidence to normal of the temperature; the expectoration is also promptly and materially reduced, the pulse becomes slower and the tendency to cyanosis and hemoptysis is no longer observed. Some writers have reported apoplectiform symptoms during the puncture; Forlanini regards them as a reflex neurosis, a "pleura shock" or "pleura eclampsia," but Samson thinks that the trouble is due to gas embolism which can be avoided by a preliminary incision rather than blind puncture. The case reports follow in the next number.

39. **Thrombosis and Embolism.**—Küster deplores the persisting frequency of thrombosis and embolism in spite of all our modern progress. At the Breslau gynecologic clinic in the last five years there have been fifty clinically appreciable cases of thrombosis and embolism, and twenty-two terminated fatally. No premonitory symptoms could be detected in any instance, and there was nothing to sustain the assumption that the coagulating property of the blood had anything to do with the development of thrombosis. Far more probable is Aschoff's theory that the thrombi develop from purely mechanical causes, some eddy or back-water current permitting a deposit of blood-platelets at points where the current is peculiarly sluggish. This assumption is very encouraging as it points the way to successful prophylaxis; early passive and active exercising of the legs starts the blood stream and washes away the deposits. At the Freiburg and Vienna clinics no case of thrombosis has developed among 5,000 parturients allowed to leave the bed from the first to the third day after delivery, while at Basel seventy-three cases of thrombosis developed among 10,000 parturients kept a week or more in bed. Küster remarks, however, that it is not so much a question of leaving the bed early, as it is of mild exercising of the legs, thus changing the points for the eddies and back-water currents and sweeping away accumulated deposits before they reach any size.

41. **Exophthalmic Goiter.**—Coenen says in the course of this review of the present status of surgical treatment of this affection that some patients long clinically and subjectively entirely cured still show a distinct lymphocytosis even seventeen years after the operation. Complete return to normal on the part of the blood is rare, so that postoperative lymphocytosis cannot be regarded as an indication for further surgical measures. He quotes Garrè to the effect that a persistent thymus may be responsible for exophthalmic goiter; marked improvement of the general symptoms and complete restoration to normal of the heart action and blood-picture followed the removal of the thymus in a case of florid exophthalmic goiter. This experience can scarcely be explained otherwise than by assuming that the persistent thymus cooperates in the development of the Basedow syndrome, especially the changes in the blood-producing system. Experimental research has confirmed this view, and this factor, the thymus, must not be disregarded in future, even if it serves only as an index for the lymphatism.

42. **Public Stations for Rest in the Open Air.**—Bratz thinks that much more might be accomplished in the treatment of tuberculosis by providing in the cities a number of readily accessible roof gardens or parts of parks where persons with incipient tuberculosis might spend an hour or two each day, sheltered from the gaze of the public, without interfering too much with their occupation. He refers in particular to teachers.

43. **Sleeping Sickness Conveyed by Glossina Morsitans.**—In this review of recent progress in our knowledge of tropical diseases, Hoffmann states that according to telegraphic advices from East Africa, Taute has found that the *Glossina morsitans* is able to serve as the host for the trypanosoma of sleeping sickness. Six out of sixteen monkeys developed sleeping sickness after they had been bitten by groups of forty glossinas of this species, bred in the laboratory.

Correspondenz-Blatt für Schweizer Aerzte, Basel

December 1st, XLI, No. 35, pp. 1217-1264

44 *Bronchoscopy. (Bronchoskopisches.) E. Gallusser.

44. **Bronchoscopy and Direct Medication.**—Gallusser comments on the beneficial action of direct medication of the bronchi with the aid of the bronchoscope, as he applied it in two cases of asthma rebellious for years to all other measures. His patients were two girls of 14 or older, and there has been no recurrence since he sprayed the bronchi directly with a novocain and epinephrin mixture. Ephraim also has reported the cure of chronic bronchitis or asthma in thirty-seven of fifty-eight cases after a single spraying; in twelve other cases the spraying had to be repeated two or three times before the cure was complete. He sometimes used 30 per cent. turpentine for the local application.

Deutsche medizinische Wochenschrift, Berlin

December 14, XXXVII, No. 50, pp. 2313-2360

45 *Traumatic Appendicitis. (Zur Frage der traumatischen Appendicitis.) O. Sprengel.

46 *Nervous Disease in Tobacco Smokers. (Die nervösen Erkrankungen der Tabakraucher.) L. v. Frankl-Hochwart. Commenced in No. 49.

47 Congenital Deformities of the Arms and Hands. (Ueber angeborene Verbildungen im Bereiche der oberen Extremität.) P. Glaessner.

48 Varnish for the Hands in Place of Gloves. (Dermagummit als Handschuhersatz.) H. Hellendall. Commenced in No. 49.

49 Behavior of Sugar in Urine Under Salvarsan. (Verhalten des Zuckers im Urin bei Salvarsanbehandlung.) P. Bendig.

50 Treatment of Obstetric Hemorrhage from Atony. (Beitrag zur Behandlung der atonischen Blutung.) E. Partos.

51 Cancer of Ovary in Girl of 5. (Krebs des Eierstocks bei einem fünfjährigen Mädchen; Ovariotomie.) W. W. Rosanoff.

45. **Traumatic Appendicitis.**—Sprengel declares that there is no instance on record to date of appendicitis due to trauma. He reports the details of two cases which would surely have been regarded as a traumatic appendicitis if the operation had not followed so close on the trauma, the findings showing that it was merely a casual coincidence that a young man with developing appendicitis happened to be kicked in the right side by a horse.

46. **The Nervous Affections of Tobacco-Users.**—Frankl-Hochwart states that he has encountered sciatica in thirty-one cases and neuralgia in the arm in twenty-two others, in all of which excessive smoking seemed to be the essential factor. Tobacco, also, he says, seems to render the motor nerves peculiarly susceptible to the effect of slight trauma, as in the case of a lawyer of 30 who had slight radial paralysis following a strained attitude kept up for several hours in order to see better during a theatrical performance. The man was otherwise healthy and not a drinking man. A merchant of 40 also had slight left peroneus paralysis after playing cards for an evening with his legs crossed. The paralysis subsided in a week under electric treatment. Diffuse pains are more common; Hochwart has had 110 cases of this kind, the pain a disagreeable gnawing sensation in the extremities, chest or back. Sometimes the knee-jerk was a little different on the two sides, otherwise the nerve and joint findings were normal. In others some joints were slightly enlarged; it is possible, he

suggests, that nicotin poisoning might afford a predisposition for chronic arthritis. He rather doubts the existence of an actual nicotin polyneuritis, but is convinced that a superposed factor, otherwise harmless, might develop it, and cites three cases possibly of this origin, mentioning further Bury's case in which there was also tobacco amblyopia, and all the symptoms subsided when the man of 35 gave up smoking. Bury has stated that in two other cases of tobacco amblyopia the men did not have quite normal control of certain fingers, and there was some numbness and anesthesia. Hochwart says of intermittent claudication, in which tobacco certainly plays an important rôle, that there must be a preexisting tendency to cardiovascular derangement. Persons affected with this angiosclerotic intermittent dysbasia often present other anomalies in development, and Jews seem to be peculiarly predisposed to it. He has a patient who is an immoderate cigarette smoker, but seems healthy except for a vasomotor neurosis in the legs; they tire exceptionally easily as he walks, but the arterial system seems normal, as also in a second case of the kind, in a man of 24, the symptoms suggesting Dejerine's intermittent claudication of the spinal cord, with other symptoms indicating nicotin poisoning and the whole train subsiding on refraining from smoking. These patients smoked forty cigarettes a day or more, one having commenced to smoke at the age of 10. Tremor was noted in about a tenth of the total cases suggesting nicotin poisoning. Among twenty-eight patients with writer's cramp, eighteen were moderate and seven excessive smokers, only three not using tobacco. His records contain seventy cases of anomalies in the genital functions in young men who smoked a great deal, generally cigarette smokers; in a certain proportion these sexual disturbances were the only manifestations of nervous trouble. A few had some inherited nervous taint. The disturbance disappeared in a number of these patients on abstinence from tobacco. He discusses further the action of the nicotin on heart and respiration, and concludes his article by emphasizing the fact learned from his experience that the localization of the toxic action of nicotin is very much like that of syphilis. There may be changes in the optic nerve, weakness of memory, transient aphasia, vestibular vertigo, tremor, hemianopsia, hemianesthesia or ataxia; this fact suggests that we should not be too hasty in classifying such symptoms in hard smokers as neurorecurrences of the syphilis. In forty-five cases of apoplexy in syphilities, 44 per cent. were hard smokers; and 34 per cent. were great or immoderate smokers among his 583 patients with tabes or general paralysis. Frankl-Hochwart is privat-docent of neuropathology at Vienna, and he has been collecting data for sixteen years on the nervous affections of tobacco-users. The present article is based on 1,500 cases from his private practice but he excludes from consideration 700 patients in whom some other toxic element cooperated, especially diabetes, syphilis or alcoholism.

Deutsche Zeitschrift für Chirurgie, Leipsic

November, CXII, Nos. 4-6, pp. 265-586

52 Bacteriology of the Blood in Anthrax. (Die bakteriologische Blutuntersuchung beim Milzbrand des Menschen.) G. Becker.
53 *Hypernephroma. (Zur Kenntnis der Hypernephrome.) M. T. Kostenko.
54 Experimental Goiter and Goiter Heart from Drinking-Water. (Weitere histologische Befunde bei durch Wasser erzeugten Rattenstrumen und Kropfherzen.) E. Bircher.
55 *Limits of Successful Resection of the Small Intestine. (Experimentelle und literarische Studien über die ausgedehnten Dünndarmresektionen.) Y. Soyesima.
56 Scarlet Red in Therapeutics. (Der heutige Stand der experimentellen und therapeutischen Verwertung der Scharlachfarbstoffe.) V. Schmieden and E. Hayward.
57 Technic for Access to Suture the Heart. (Beitrag zur Wahl der Methode der Freilegung des Herzens zur Naht.) O. König.
58 *Enterostomy in Peritonitis and Ileus. (Ueber die Enterostomie als eine lebensrettende Hilfsoperation bei Peritonitiden und Darmokklusionen.) A. Krogius.
59 *Small Intestine for Plastic Operations on the Esophagus. (Zum Ersatz der Speiseröhre durch Dünndarmtransplantation.) C. Ritter.

53. **Hypernephroma.**—Kostenko reports from Charkow twenty-two cases, including six of what he calls the typical benign adrenal hypernephroma. He reviews in particular the Russian literature on the subject, thirty-eight illustrations accompanying the article. He insists on the classification of typical and atypical, and on the similarity of the growths as they occur in either the kidney or the adrenals. The structure of the typical growths closely resembles the cortex of the normal adrenal, but the atypical show secondary changes in stroma and parenchyma. Tumors of similar structure are also encountered in other organs, in the liver, female genitals, pelvic cellular tissue and elsewhere, all evidently originating in aberrant adrenal cells. Sometimes the resemblance to normal adrenal tissue is more striking in the metastases than in the primary growth.

55. **Extensive Resection of Small Intestine.**—Soyesima discusses the limits of successful resection of the small intestine, basing his conclusions on the ultimate outcome in fifty-one cases on record and considerable personal experimental research on dogs. The outcome seems to depend more on the proportional length of the segment resected than on the absolute number of feet. Brenner's was probably the most extensive successful resection yet attempted, as he removed 83.6 per cent. of the entire small intestine, 540 cm., from a woman of 61 with incarcerated femoral hernia. At the necropsy of the patient nearly three years afterward, it was found that only 106 cm. had been left; the woman succumbed to progressive marasmus. Dogs seem to tolerate without harm resection up to 90 per cent., but 80 per cent. seems to be the limit in man.

58. **Enterostomy in Peritonitis and Ileus.**—Krogius emphasizes the life-saving importance of enterostomy, especially in the cases of obstruction of the bowel coming on a few days after a laparotomy for purulent peritonitis. The trouble in these cases may be merely a circumscribed paralysis of a small segment of the intestine, induced by the local action of the peritonitis. In other cases a similar circumscribed paralysis may develop or persist after a mechanical obstruction has been removed, although there may be no generalized peritonitis. The inability of the intestine to pass its contents along may be due to still other causes, such as a fatigued condition from prolonged distention, injury from eventration, tumors or tuberculous process. Whatever the cause, salvation lies only in recognizing the exact nature of the trouble in time and remedying it by an immediate enterostomy. The lack of high fever and symptoms of sepsis and the comparatively slow and good pulse, speak in favor of a circumscribed paralysis. A secondary mechanical obstruction from adhesions or other cause is generally accompanied with intense pains and increased peristalsis, and there is generally a longer interval after the operation. A laparotomy is required in this case, but for the circumscribed paralysis an enterostomy is all that is needed, and Krogius advises it in prophylaxis in dubious cases, especially when the bowel has been much distended. The opening should be made above the paralyzed stretch, and thus in the small intestine as a rule. Only when the large intestine is involved is a fistula into the cecum indicated. If the fistula is made by the Witzel technic it can be applied high up on the small intestine without danger of inanition. He found a primary enterostomy apparently a life-saving measure in thirteen cases, the details of which he tabulates. In twenty-eight other cases the fistula worked well but the patients succumbed to various complications elsewhere. In forty-three other cases the fistula did not do much good and the patients died, necropsy showing extensive diffuse peritonitis. He remarks that although 66 per cent. died of the total 107 cases in which he has applied enterostomy as a primary or secondary measure, yet the fact that 34 per cent. were saved, who in all probability would have succumbed, speaks volumes for the benefit from it.

59. **Utilization of Small Intestine as Substitute for the Esophagus.**—Ritter's experimental work has apparently established that it is possible gradually to accustom a loop of intestine, drawn outside the body from its normal sheltered nook, to changes in circulation which would inevitably entail gangrene if they occurred within a brief period of time. He found it possible to keep a loop of small intestine, 60 cm. long, in good vital condition after it was drawn outside the body, ready to utilize as a substitute for the esophagus. The essential point is to ligate the mesenteric vessels one at a

time, with sufficient intervals to permit adjustment to the novel conditions. By this means he was able to isolate from its mesenteric vessels a stretch of intestine 37 cm. long, its circulation proceeding satisfactorily and its aspect normal, suitable for free transplantation.

Medizinische Klinik, Berlin

December 17, VII, No. 51, pp. 1963-2004

60 Strabismus. (Ueber Entstehung und Behandlung des Schielens.) C. Adam.
61 *Pain in Sacral Region and Back. (Diagnose des Kreuz- und Rückenschmerzes.) S. Erben.
62 Treatment of Eclampsia. (Zur Behandlung der Eklampsie auf Grund von über 100 selbstbeobachteten Fällen.) F. Engelmann.
63 Occupational Neuroses in Telephone Operators. (Prognose und Therapie bei den Unfallneurosen der Telephonistinnen.) E. Beyer.
64 Technic for Endovesical Removal of Bladder Tumors. (Zur Therapie der Blasengeschwülste.) L. Casper.
65 Plastic Operation on Anal Sphincter. (Die Sphincterplastik nach Schoemaker.) P. Frangenheim.
66 Experimental Research on Curative Action of Superheated Air on Arthritis with Effusion. (Einfluss der Heissluftbehandlung auf Gelenkergüsse.) E. Schepelmann.
67 Behavior of Greater Omentum During Peritonitis and Enteritis. (Verhalten des grossen Netzes bei der peritonealen und intestinalen Infektion.) J. Koch.
68 General Principles of Treatment of Acute Dermatitis. (Dermatologie.) F. Pinkus.

61. **Diagnosis of Sacral Pain and Backache.**—Erben cites the points which differentiate lumbago from the rachialgia of neurasthenia, especially the transverse, low location of the pain, its sudden onset, its aggravation by straining, by turning in bed, the lack of especially tender points, of exacerbation under the influence of emotions and the frequent coincidence of curvature of the spine. The curvature is more of an acute angle than with scoliosis of other origin, and the abnormal attitude is a defense against pain-producing movements and not due to paralysis or muscular contracture. Erben is convinced that the lumbago of laborers is the result of dragging out of place one or more articulations in the vertebral column. The resulting disturbance subsides in the course of a week or two or three weeks at most, but it is liable to recur on slight provocation months or years later. If a single attack lasts longer than this, there is probably some incipient spondylarthritis or sliver of bone sprung from some spinous process, or some new growth in a vertebra. Chronic lumbago may be a manifestation of osteomalacia, cancer in the rectum, intradural tumor, tabes, leukemia with myeloma, polymyositis, neuritis or other general affection or, if the pain is unilateral, some local lesion may finally reveal itself. Increase of the sacral pain with menstruation suggests some gynecologic lesion. Acute sacral pain radiating into the leg, with fever, and increased by pressure is a premonitory sign of small-pox, while pain at the sacro-iliac articulation seems to be a constant accompaniment of Malta fever. Erben's article is accompanied by roentgenographs of several typical cases, and he discusses the various affections liable to induce pain in the back and its characteristic features in the different conditions. Mischief in the heart or aorta may long manifest itself merely by pain in the back, shoulder or scapula on one or both sides; exertion increases the pain which is not the case with the rachialgia of neurasthenia. If the pain in the shoulder subsides under diuretics or nitroglycerin, some organic affection in the aorta or coronaries may be accepted. Lesions in the posterior mediastinum are liable to induce intrascapular pain; lack of aggravation under diagnostic injections of tuberculin, apparently excludes a tuberculous process. The radiating pain with gastric ulcer and pancreas disease is generally in the left shoulder or scapula, while with gall-bladder trouble and appendicitis pain is felt in the right shoulder. If the pain in the back is increased by drinking cold water, cholelithiasis or ulceration in stomach or duodenum should be suggested, or an ulcer in the bowel below, from exaggeration of the peristalsis. With stenosis of the pylorus there is frequently pain in the left scapular region two or three hours after a meal. With a lesion in the cecum, the pain in the abdomen and right shoulder is aggravated by extreme stretching of the right leg, which is not the case with cholelithiasis, nephrolithiasis or lead colic. In case of pain in the abdomen and back at the same time, a little morphin will usually deaden the radiated pain while scarcely modifying the primary pain. With calculi in the kidney the pain is intermittent, while the pain with paranephritis may resemble that with lumbago of the upper lumbar vertebræ, but the flank is not tender with the latter as with paranephritis.

Mitteilungen aus den Grenzgebieten der Med. und Chir., Jena

XXIV, No. 1, pp. 1-194. Last indexed December 23, p. 211

69 *Pathogenesis of Acute Disease of the Pancreas. (Ueber die Pathogenese der akuten Pankreaserkrankungen.) E. Polya.
70 Hair-Ball in Stomach. (Fall von Trichobezoar des Magens bei Infantilismus.) F. Hüttenbach.
71 *Joint Lesions in Tabes. (Zur tabischen Arthropathie.) M. Krüger.
72 Influence of Thyroid Treatment on Metabolism of Nitrogen and on Blood Picture. (Ueber den Einfluss von Basedowstruma- und Kolloidstrumapräparaten und Thyreoddin auf den Stickstoffwechsel und auf das Blutbild von Myxödem unter Berücksichtigung ihres Jodgehaltes.) A. Fonio.
73 *Consequences of Thrombosis in Portal System. (Ueber die Folgen der Thrombose im Gebiete des Pfortadersystems.) R. de J. de Jong.

69. **Pathogenesis of Acute Disease of the Pancreas.**—Polya devotes eighty-four pages to the description of his extensive experimental research, tabulating the details of 178 different experiments, supplementary to forty-six previously published. The work was done at the pathologic institute at Budapest. He found that the albumin-digesting pancreas ferment, trypsin, is in fact able to induce acute disease of the pancreas, but that the preceding stage, the trypsinogen, is harmless. Only when this trypsinogen is activated and thus transformed into trypsin, does damage result. He has established, however, that bacteria are able to induce this activation. The results of his research, therefore, sustain both the ferment theory and the parasitic theory of the pathogenesis of acute disease of the pancreas.

71. **Joint Lesions in Tabes.**—Krüger's experience with eleven patients with tabetic arthropathies, involving the knee in seven, throws light on the origin, clinical picture and treatment. The special feature of the arthritic process is its progressive character: the disturbances in gait expose the joints to trauma to an exceptional degree and interfere with healing. He comments on the typical Roentgen-ray findings: an extensive destructive and a proliferating process run their courses together and lead to abnormal bone growth outside of the capsule. The whole trouble frequently begins with an erosion of the bone; this is often distinctly evident in the Roentgen picture. The Nonne reaction is simple and often extremely useful, especially when there are no other symptoms of tabes. Measures to cure the underlying syphilis should be tried in every case, particularly when there is reason to suspect a gummatous lesion. The joint should be immobilized in the early stages. Krüger has never witnessed any benefit from resection of the joint. If an operation is indispensable, exclusion of the diseased joint is usually indicated. Oehlecker has reported good results from the Pirogoff operation with neuropathic disease of the ankle. As a rule, simple amputation is preferable to resection of the joint, although osteoplastic amputations might be advisable in certain cases.

73. **Consequences of Portal Thrombosis.**—De Jong gives an illustrated description of the necropsy findings in nine cases of thrombosis in the portal system, comparing them with the clinical course of the cases and showing the clinical picture at the time and later which must inevitably result from certain localizations of the thrombosis.

Münchener medizinische Wochenschrift

December 12, LVIII, No. 50, pp. 2649-2696

74 Action of Epinephrin and Pituitary Extract on Surviving Rabbit Uterus. (Ueber die Wirkung des Adrenalins und Pituitrins auf den überlebenden Kaninchenuterus und über die Verwertbarkeit der Uterusmethode für den Adrenalinnachweis im Serum.) W. Falta and G. B. Fleming.
75 Bacteriology of the Blood with Sinus Thrombosis. (Bakteriologische Blutuntersuchungen bei Sinusthrombose.) H. Herzog.
76 Dosage of Roentgen Rays by Artificial Light. (Beitrag zur quantitativen Messung der Röntgenstrahlen in der Therapie.) H. Ritter.
77 Umbilical Funicular Hernia. (Zur Pathologie und Therapie des Nabelschnurbruches.) W. Hannes.
78 Anesthesia in Obstetrics. (Zur Schmerzlinderung normaler Geburten.) S. Weinmann.

79 *Guaiacol and Arsenic in Tuberculosis. (Die Guajakol-Arsentherapie der Tuberkulose.) L. Nürnberger.
80 Salvarsan in Scorbutus. (Ueber Salvarsanbehandlung bei Skorbut.) M. Tuschinsky and G. Iwaschenzow.
81 Cerebrospinal Meningitis as Recurrence After Salvarsan. (Zerebrospinalmeningitis als Rezidiv nach Salvarsan.) E. Oberholzer.
82 Localization of the Speech Centers. (Beitrag zur Frage der Lokalisation der Sprachzentren im Gehirn.) E. Borchers.

79. Guaiacol and Arsenic in Treatment of Tuberculosis.—Nürnberger's experimental work failed to show any bactericidal effect from guaiacol and Fowler's solution, alone or together, on the tubercle bacilli in glycerin-agar cultures, while the course of tuberculosis in rabbits and guinea-pigs did not seem to be modified in the least by them.

Wiener klinische Wochenschrift, Vienna

December 14, XXIV, No. 50, pp. 1729-1758

83 *Hematoporphyrin in the Urine in Lead Poisoning. (Zur Kenntnis der Hämatoporphyrinurie bei der Bleivergiftung.) A. Götzl.
84 *Suture of the Heart. (Ueber Herzverletzungen.) E. Ranzi.
85 *Plastic Operations on the Esophagus. (Ueber den künstlichen Ersatz der Speiseröhre.) P. Frangenheim.
86 Treatment of Talipes. (Zur Klumpfusstherapie.) O. Semeleder.
87 Hernia of the Bladder. (Hernia properitonealis vesicalis.) O. Hanasiewicz.

83. Experimental Radiologic Research on Lead Poisoning.—Götzl's work confirms Perutz' discovery that certain forms of intensive artificial light induce a syndrome suggesting hydro estivale, when the animals are under the influence of sulphonal poisoning. Götzl used lead instead of sulphonal, but the sensitization and outcome were the same, when the lead poisoning had reached the point of hematoporphyrinuria.

84. Suture of the Heart.—Ranzi says that since Rehn published in 1896 the first successful case of suture of the heart, 223 cases of operative treatment have been recorded, with a mortality of 53.3 per cent. To this number Ranzi adds three cases of a stab wound and three of a firearm-wound of the heart, with operative treatment at von Eiselsberg's clinic at Vienna, but only one of the patients survived. The others were practically moribund when operated on. In two cases the operation was deferred for several hours as the anemia did not seem theatening, but the outcome showed that it might have been better in these cases to have operated at once. In the one successful case five hours had elapsed before the operation but the anemia was not very intense. In some of the cases on record the heart action had been entirely arrested by the accumulated blood, but the heart recuperated and started to beat again as soon as the blood was removed. This did not happen in the one case of this kind in Ranzi's experience.

85. Artificial Esophagus.—Frangenheim applied the Bircher technic to make an artificial esophagus out of a roll of skin, in a case of cancer in the esophagus. A fistula developed at the junction of the stomach and the new esophagus, and gastric juice and food from the esophagus escaped through the fistula, preventing healing. He thinks that this technic is doomed to failure unless the junction at this point can be made watertight, and for this he suggests utilizing a segment of small intestine, the combination of the Bircher tube plus a small segment from the small intestine offering unusual advantages. It is a difficult matter to get a segment of small intestine long enough to reach the whole way to the throat without danger of gangrene, but the above combined technic avoids the drawbacks of the other methods while retaining their special advantages.

Gazzetta degli Ospedali e delle Cliniche, Milan

December 10, XXXII, No. 148; pp. 1563-1578

88 The Morgagni Bicentennial. (Ricordiamo Giovanni Batista Morgagni.) A. de Giovanni.
89 The Wassermann Reaction in Diseases of the Liver. (L'importanza della sierodiagnosi di Wassermann nelle malattie del fegato.) M. Marzemin.

December 12, No. 149, pp. 1579-1586

90 Santonin in Treatment of Diabetes Mellitus. (Sulla cura del diabete mellito con la santonina.) D. Miotto.

Riforma Medica, Naples

December 11, XXVII, No. 50, pp. 1373-1400

91 *Stomach Disease of Mental Origin. (Psicopatie gastriche e vomiti incoercibili.) A. Murri.
92 The Cerebrospinal Fluid in Diagnosis of Syphilis. (Sull'importanza della citoscopia cefalo-rachidiana nei sifilitici.) U. Sorrentino. Commenced in No. 49.

91. Psychic Gastric Disturbance.—Murri cites some interesting cases in which an attack of "rose-cold" was brought on by holding in the hand an artificial rose, or an acute attack of nervous coryza by the sight of each glacier seen in crossing the Alps. These and similar instances emphasize the psychic origin of certain affections, generally of peripheral origin, but in the predisposed liable to occur from mental impressions alone. This is the explanation he offers for some cases of stomach disturbances and uncontrollable vomiting, saying that the stomach and intestines are just as liable to be the seat of these psychic affections as the nose. He remarks parenthetically that the practice of medicine is not a calm lake where one can lazily drift; it is rather a tossing sea where the physician has to be on the alert to keep his balance, grasping at theories to hold by and quick to seize on the true and disregard the false in each. He reports a case of uncontrollable, incessant vomiting for over two months in a man of 34 who had had business and family worries. No cause for the vomiting could be discovered; it resembled the cyclic, recurring vomiting of infants, and Murri is inclined to regard the case as the equivalent in an adult of the uncontrollable vomiting of infants. The accompanying acetonemia confirms this view, as also the absence of any known cause. The only difference was that the vomiting was incessant, lacking the cyclic character of the affection in infants. The nervous origin of the trouble seems beyond question, he thinks; the patient displayed other signs of irritability of the nervous system, tachycardia, arhythmia, slightly abnormal temperature, and a preceding period of anorexia and defective digestion.

Upsala Läkareförenings Förhandlingar, Upsala

XVII, Nos. 1-2, pp. 1-140. Last indexed November 4, p. 1578

93 Research on Certain Optical Illusions. (Om några synillusioner: I. Charpentiers illusion; II. Exners punktrörelse.) H. Öhrvall.
94 Medical Impressions of German Insane Asylums. (Reseintryck från några tyska sinnessjukanstalter.) E. Vestberg.
95 Influence of Osmotic Pressure on Development of Frog Embryo. (Osmotiska tryckets förhållande hos Rana temporaria under utvecklingen efter geléböljenas genomborrande.) E. L. Backman and C. G. Sundburg.
96 Action of Electric Current on Nerves of Taste. (Några undersökningar angående den elektriska smaken.) G. Heilman.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

LEHRBUCH DER THERAPIE INNERER KRANKHEITEN. Herausgegeben von DR. PAUL KRAUSE, O.Ö. Professor und Direktor der Medizinischen Universitäts-Poliklinik in Bonn, und DR. CARL GARRÈ, O.Ö. Professor und Direktor der chirurgischen Universitäts-Klinik in Bonn. Vol. 2. Spezielle Therapie innerer Krankheiten. Paper. Price, 10.50 marks. Pp. 712, with 10 Illustrations. Jena: Gustav Fischer, 1911.

ARBEITEN AUS DEM PHARMAZEUTISCHEN INSTITUT DER UNIVERSITÄT BERLIN. Herausgegeben von DR. H. THOMS, Professor und Direktor des pharmazeutischen Institutes der Universität Berlin. Eighth Volume. Cloth. Pp. 280. Berlin: Urban & Schwarzenberg, 1911.

RETINOSCOPY (OR SHADOW TEST) IN THE DETERMINATION OF REFRACTION AT ONE METER DISTANCE, WITH THE PLANE MIRROR. By James Thorington, A.M., M.D. Sixth Edition. Cloth. Price, $1. Pp. 71, with 61 Illustrations. Philadelphia: P. Blakiston's Son & Co., 1911.

TEXT-BOOK OF MEDICAL JURISPRUDENCE AND TOXICOLOGY. By John J. Reese, M.D. Eighth Edition. Revised by D. J. McCarthy, A.B., M.D. Cloth. Price, $3. Pp. 660. Philadelphia: P. Blakiston's Son & Co., 1911

MANUAL OF OPERATIVE SURGERY. By John Fairbairn Binnie, A.M., C.M. (Aberdeen). Fifth Edition. Cloth. Price, $7. Pp. 1153, with 1,365 Illustrations. Philadelphia: P. Blakiston's Son & Co., 1911.

STUDIES ON LEPROSY. Public Health and Marine-Hospital Service of the United States. Public Health Bulletin No. 50, 1911. Paper.

LIST OF THE MEDICAL PERIODICALS PRESERVED IN THE LIBRARIES OF IRELAND. Price, Sixpence. Dublin: Hanna & Neale.

FORHANDLINGER PAA DET 14DE ALMINDELIGE NORSKE LAEGEMÖTE. 1911. Centraltrykkeriet, Kristiania, 1911.

PROCEEDINGS, AMERICAN CONFERENCE OF PHARMACEUTICAL FACULTIES. Twelfth Annual Meeting. 1911.

TRANSACTIONS OF THE BERKS COUNTY MEDICAL SOCIETY for 1908, 1909 and 1910.